# AIR WAR COLLEGE

## RESEARCH REPORT

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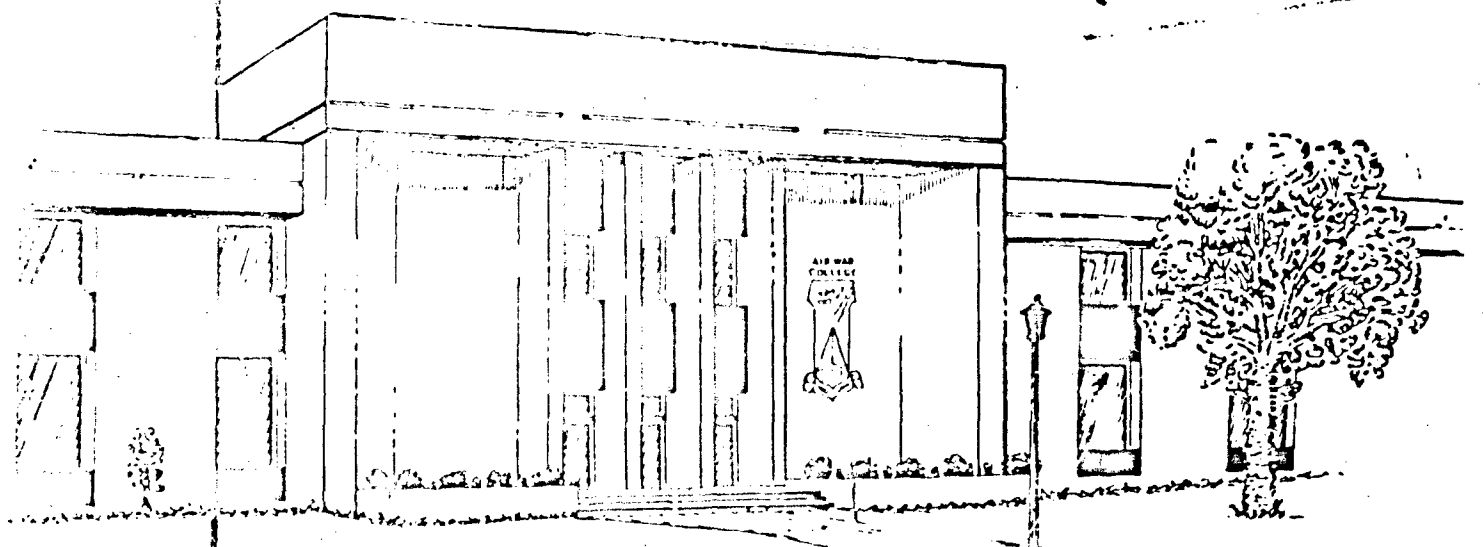
CARDIOVASCULAR RISK ASSESSMENT IN THE U.S. COAST GUARD



By COMMANDER SPERRY C. STORM
U.S. COAST GUARD





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Cardiovascular heart disease (CHD) is the number one medical cause of death in personnel over 35 on active duty in the U.S. Coast Guard. In the Coast Guard, of the total deaths involving active duty personnel over the age of 35 in the past 6 years, 29 were medically related. CHD accounted for 26 of these. Further, on the basis of this research report, those Coast Guard personnel over 35 on active duty are receptive to information and would adjust those lifestyle factors which have placed them at high risk. This would of course mitigate their situation. The relationship between CHD and controllable lifestyle factors, primarily nutrition, exercise and emotional balance has been established by research such as the Framingham Heart Study. The controllable factors, as well as those which are uncontrollable have been termed "cardiovascular risk factors." There is difficulty in treating diagnosed individuals who are in a high risk category due to the resistance to making adjustments in long held, habitual lifestyle patterns. However, personal involvement by an individual, who is self-motivated, can often be achieved by providing him or her with the information concerning the personal risks involved and the

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optional methods available to improve the situation. For example, the Framingham study identified blood cholesterol as a controllable risk factor. This can be controlled in most cases through adjustments in nutrition and exercise. Changing blood cholesterol levels can dramatically affect the risk of developing heart disease. For every 1 per cent of change in cholesterol, the risk of heart disease changes by 2 or 3 per cent. This information can often by the "motivator" for change, when change is needed. However, as cardiovascular disease has a long incubation period, its prevention must concentrate on measures instituted early in life. Those at high risk must be identified in time for preventive measures to be significantly effective. This research project, in addition to assessing the fatality data for Coast Guard personnel over the past six years, identifies lifestyle priorities for a highly motivated group in the Coast Guard--the senior officers. It then provides information relating to the number of senior officers who have experienced some form of CHD and remained on active duty. The number of members over the age of 35 on active duty in the Coast Guard is identified. Conclusions include comments about the need for a Coast Guard health care prevention program similar to the accident prevention program, proof of the thesis statement and findings concerning the responsiveness of the survey group concerning physical fitness, tobacco, alcohol and medication use, and stress and tension levels. The responsiveness of the survey group indicates a high interest in a program which provides a basis to adjust lifestyle habits voluntarily for better cardiovascular health. A typical program which identifies CHD risk factors, and provides information for personal self-assessment and correction where necessary is included for use by the Coast Guard.

AIR WAR COLLEGE
AIR UNIVERSITY

# CARDIOVASCULAR RISK ASSESSMENT IN THE U.S. COAST GUARD

by

SPERRY C. STORM
COMMANDER
U.S. COAST GUARD

A RESEARCH PROJECT SUBMITTED TO THE FACULTY

IN

FULFILLMENT OF THE RESEARCH REQUIREMENT

Research Advisor: LTC ROBERT FOWLER USAF

MAXWELL AIR FORCE BASE, ALABAMA

March 1985

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Dr. Robert Bogard, AWC/DFR

## BIOGRAPHICAL SKETCH

Sperry Culler Storm, Commander, United States Coast Guard is from Frederick, Maryland. He enlisted in the Coast Guard in 1957, attended Officer Candidate School and was commissioned in 1964. After attending flight training at the Naval Air Training Command in Pensacola, Florida and Corpus Christi, Texas he was assigned as a search and rescue pilot in San Francisco. After assignment as an instructor at the Naval Air Training Command, he attended the U.S. Air Force Maintenance Officer Training at Chanute AFB, Illinois. He was then assigned as the Engineering Officer at Coast Guard Air Stations in the Philippines, Port Angeles, Washington, Borinquen, Puerto Rico, and Kodiak, Alaska. He has also had two tours in Washington, D.C. on the staff of the Aeronautical Engineering Division, Coast Guard Headquarters. During his assignment in Washington, he attended American University and obtained a BS degree in Business Administration. Commander Storm is a graduate of the Air War College, class of 1985.

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AIR WAR COLLEGE

RESEARCH REPORT

EXECUTIVE SUMMARY

TITLE: CARDIOVASCULAR RISK ASSESSMENT IN THE U.S. COAST GUARD

AUTHOR: Commander Sperry C. Storm, U.S. Coast Guard

Cardiovascular heart disease (CHD) is the number one medical cause of death in personnel over 35 on active duty in the U.S. Coast Guard. In the Coast Guard, of the total deaths involving active duty personnel over the age of 35 in the past 6 years, 29 were medically related. CHD accounted for 26 of these. Further, based on this research report those Coast Guard personnel over 35 on active duty are receptive to information and would adjust those lifestyle factors which have placed them at high risk. This would mitigate this situation.

The relationship between CHD and controllable lifestyle factors, primarily nutrition, exercise and emotional balance has been established by research such as the Framingham Heart Study. The controllable factors, as well as those which are uncontrollable have been termed "cardiovascular risk factors."

There is difficulty in treating diagnosed individuals who are in a high risk category due to the resistance to making adjustments in long held, habitual lifestyle patterns. However, personal involvement by an individual, who is self-motivated, can often be achieved by providing them with the information

concerning their risk and the optional methods available to them to improve their situation. For example, the Framingham study identified blood cholesterol as a controllable risk factor. This can be controlled in most cases through adjustments in nutrition and exercise. Changing blood cholesterol levels can dramatically affect the risk of developing heart disease. For every one percent of change in cholesterol, the risk of heart disease changes by two to three percent. This information can often be the "motivator" for change, when change is needed. However, as cardiovascular disease has a long incubation period, its prevention must concentrate on measures instituted early in life. Those at high risk must be identified in time for preventive measures to be significantly effective.

This research project, in addition to assessing the fatality data for Coast Guard personnel over the past 6 years, identifies lifestyle priorities for a highly motivated group in the Coast Guard; the senior officers. It then provides information relating to the number of senior officers who have experienced some form of CHD and remained on active duty. The number of members over the age of 35 on active duty in the Coast Guard is identified. Conclusions include comments about the need for a Coast Guard health care prevention program similar to the accident prevention program, proof of the thesis statement and findings concerning the responsiveness of the survey group concerning physical fitness, tobacco, alcohol and medication use, and stress and tension levels. The responsiveness of the survey

group indicates a high interest in a program which provides a basis to adjust lifestyle habits voluntarily for better cardiovascular health. A typical program which identifies CHD risk factors, and provides information for personal self-assessment and correction where necessary is included for use by the Coast Guard.

## I. THESIS STATEMENT

Cardiovascular heart disease (CHD) is the number one medical cause of death in personnel over 35 on active duty in the U.S. Coast Guard. Further, those Coast Guard personnel over 35 on active duty are receptive to information related to CHD and would adjust those lifestyle factors which have placed them at high risk.

## II. BACKGROUND

As a student at Air War College, the author became involved in a program of cardiovascular health assessment and fitness for both students and faculty. Impressed with the positive response which this program invoked, and aware that a few fellow Coast Guardsmen who the author had personally known had experienced cardiovascular problems which had either impacted on their career, or significantly changed their life, were factors that led to the selection of the subject as an academic research project.

Like the U.S. Air Force, and based on this research report, cardiovascular heart disease (CHD) is the primary medical cause of death among active duty Coast Guard personnel over the age of 35. Hence, cardiovascular disease robs the Coast Guard of important core personnel who could otherwise remain on active duty, rather than suffer death or be retired early, possibly with a permanent disability, at significant cost to the taxpayer.

The relationship between CHD and controllable lifestyle factors, primarily nutrition, exercise and emotional balance has been established by research such as the Framingham Heart Study. The controllable factors, as well as those which are uncontrollable have been termed "cardiovascular risk factors."

There is difficulty in treating diagnosed individuals who are in a high risk category due to the resistance to making adjustments in long held, habitual lifestyle patterns. However, personal involvement by an individual, who is self-motivated, can often be achieved by providing them with the information concerning their risk and the optional methods available to them to improve their situation. For example, the Framingham study identified blood cholesterol as a controllable risk factor. This can be controlled in most cases through adjustments in nutrition and exercise. Changing blood cholesterol levels can dramatically affect the risk of developing heart disease. For every one percent of change in cholesterol, the risk of heart disease changes by two to three percent. This information can often be the "motivator" for change, when change is needed. However, as cardiovascular disease has a long incubation period, its prevention must concentrate on measures instituted early in life. Those at high risk must be identified in time for preventive measures to be significantly effective.

According to the American Heart Association, coronary artery disease is the number one cause of death and disability in the United States, responsible for approximately 550,000 deaths each

year. On the average, almost three Americans suffer a heart attack every minute of the day. Based on this research project there is high motivation among those personnel in the working environment of the Coast Guard, to make lifestyle changes which could mitigate the current impact. Therefore, this paper is to provide information for the use of the responsible Coast Guard/Public Health staff as they see appropriate, as well as raise the knowledge level concerning CHD in the Coast Guard.

## III. DESIGN AND CONDUCT OF THE RESEARCH

### A. DESIGN PROCEDURE

After selecting the topic, the research project was begun by discussing the design of the survey with LTC Robert Fowler, USAF, author of the Air War College program, and LTC David Brown, USAF, Director of Evaluation, both on the faculty of Air War College. Correspondence was initiated to the Chief, Office of Health Services, U. S. Coast Guard, and the Chief, Special Medical Operations Branch, U.S. Coast Guard in order to obtain their cooperation and assistance in the project. The original intention was to determine if a cardiovascular health program on a voluntary participation basis for active duty Coast Guard members, similar in scope to programs at senior officer service schools, would be of value. To accomplish this, required researching data on Coast Guard personnel over the age of 35. The following data was requested from the Office of Health Services in Headquarters:

1. Number of heart by-pass operations received by Coast Guard active duty personnel.
2. Number of fatal heart attacks.
3. Number of in-patient for treatment days due to cardiovascular problems.
4. Number of disability permanent retirements related to cardiovascular disease.
5. Number of early retirements (temporary).
6. Number of total sample that relate to senior officers (O-5 and above).

Unfortunately, the requested data was not available. The Office of Health Services had only recently assumed management responsibility for the disability evaluation system, and there were not enough cases to give significant numbers related to the Veterans Administration codes for disability retirements. Also, the data on the number of by-pass operations and days of hospitalization for cardiovascular disease was not available. The Coast Guard does not possess extensive hospital systems or a computerized system to track discharge diagnosis. Coast Guard in-patient care is purchased from the private community or military treatment facilities with the only documentation available to a central Coast Guard facility, being the invoice for payment for services rendered. The numbers of fatal heart attacks could only be determined through manual review of decedent data cards available in the Decedent Affairs Section of the Retired Military Affairs Branch (G-PS-1), Coast Guard Headquarters. Subsequent contact with the Personnel Management Information Service (G-P-2) staff provided a breakdown of active duty Coast Guard personnel over the age of 35 by grade. This office later provided the necessary mailing labels to conduct a the personal survey of 961 senior officers.

After some discussion with the faculty advisors and the information obtained from the Chief, Special Medical Operations Branch, U.S. Coast Guard Headquarters, the following survey design was selected:

1. Obtain the data regarding number of deaths in the Coast Guard for active duty personnel over the age of 35 by personally visiting Coast Guard Headquarters (G-PS-1) and reviewing the decedent data cards.
2. Survey at least 900 active duty members to determine the following:
    a. Number of personnel on active duty who had experienced treatment for a cardiovascular event and had returned to, or remained on active duty.
    b. The personal priorities of the active duty members in terms of improving their lifestyle, particularly with regard to cardiovascular health.

B. Review of Decedent Data Cards

The author extended by one day a previously scheduled field trip to Washington, D.C. in order to visit Coast Guard Headquarters and review the decedent data cards. This was accomplished on 19 October, 1984. The review was conducted on the following basis:

1. Period to be reviewed 01 JAN 79 - 19 OCT 84. (5YRS - 9 1/2 months)
2. Only those medically related fatalities for individuals with a date of birth before 01 JAN, 1949 (age 35 and over) would be used for purposes of this research, however all deaths on active duty within the period would be recorded.
3. Causes of death would only be recorded in the following categories:
    a. Medical to include the diagnosis when available for later evaluation.
    b. Suicide and motorcycle accidents. (Note : This data is not included in this research report, but available upon request. Data was obtained in order to provide a 'fall back' research project if enough data could

not be researched for cardiovascular health, considering the academic schedule constraints.)

C. DEVELOPMENT OF SURVEY QUESTIONNAIRE

Following the tabulation of the decedent data, the survey questionnaire was developed. The questionnaire was reviewed by the faculty advisors, and was discussed during a seminar meeting with other students who were involved in similar research projects. This seminar consisted of an Air National Guard Flight Surgeon, USAF active duty nurse and the faculty, as well as faculty advisors. A cover letter was then prepared and a test survey was conducted among a test group of twelve students. In order to test for responses to questions dealing with those individuals who had experienced cardiovascular problems, three of the students were provided a list of assumptions leading to their 'role playing' positive responses to questions concerning their experiences, as though they had medical treatment for cardiovascular problems. The cover letter was edited and the survey questionnaire modified based on the criticism and comments of the test group. This was of invaluable assistance by helping to insure that the survey was valid and correct. A copy of the modified letter and survey questionnaire was forwarded to the Chief, Special Medical Operations Branch, U.S. Coast Guard Headquarters for comment. His response, containing suggested modifications was received too late to incorporate. The suggested modifications would have increased the validity of the data for those respondents who had medical treatment for cardiovascular data requiring a more definitive answer to question number one concerning diagnosis of the problem. Further, the

suggested modifications would have improved the definition of 'fit for aviation duty'.

The cover letter (A), survey questionnaire (B) and the unincorporated modifications (C) are contained in Appendix A - C.

D. CONDUCT OF THE SURVEY

Appendix (D) contains the schedule of the survey. The survey was conducted in such a way to insure anonymity for the respondents. Senior commissioned officers, O-5 and above, including flag officers were selected as the survey group for the following reasons:

1. This group of 961 officers was just slightly in excess of the initial selected population of 900.
2. All were over age 35.
3. The group mailing labels were collated together, therefore allowing ease of tracking and audit of the mailing effort.
4. Most importantly, I anticipated that the motivation factor of this group would be the highest, thereby resulting in the following:
    a. High rate of response and feedback.
    b. Interest in furthering cardiovascular health education at the top levels of management, not necessarily headquarters directed, but as all senior officers were included, throughout districts and individual commands.

The Air War College administrative staff under the direction of LTC Larry F. Perkins, USAF, provided instructions and assistance in the printing and mailing effort. The manual labor of folding, sealing, and labeling of the envelopes was accomplished by the author, along with whatever assistance that could be mustered on a day to day basis.

E. SURVEY RESULT TABULATION

All tabulation was conducted by the author utilizing an APPLE IIC personal computer. Without this device the effort could not have been accomplished within the academic schedule constraints, as no computing center existed at the beginning of the Academic Year for the use of the students.

1. Coast Guard Active Duty Personnel Over Age 35 by Rank Category - obtained from the Office of Personnel (G-P-2) Personnel Management Information Staff, Coast Guard Headquarters. Appendix (E).

2. Fatality Survey - data was manually recorded from the Decedent Affairs Section of the Retired Military Affairs Branch (G-PS-1), Coast Guard Headquarters decedent data cards. Appendix (F).

3. Senior Officer Survey:

a. Senior Officer Survey Distribution - Appendix (G).

b. Senior officers on active duty who had experienced treatment for a cardiovascular event and had returned to, or remained on active duty. Data relates to question numbers one through six of the survey, and includes their tabulated response to question seven, Lifestyle Attitude Survey. This is handled separately for the purpose of differentiating between those who have had cardiovascular problems, and those who haven't. Appendix (H), and (J1).

c. Senior Officer Lifestyle Attitude Survey - This survey presented a significant task for tabulation, as over 7300 numbers had to be accounted for, with control methods provided in order to insure accuracy. There were three phases established to accomplish the task. Phase (1) - Design of Accounting System. After experimentation with data base management and spreadsheet software available for the

personal computer, the spreadsheet option was chosen in order to simplify the data input task. A formatted spreadsheet with ten columns, and 100 rows would be utilized for groups of 99 survey sheets (the first row being reserved for labels). Each sheet would be numbered to coincide with the row number, beginning with two through 100, for a total of 99, which would enable checking and audit. Each column was labeled by Lifestyle Goal Nr; ten goals, thus ONE through TEN. Each row represented an individual response sheet. Thus the spreadsheet appeared:

| Sheet NR | Lifestyle Goal Nr |
|---|---|
| 1 | ONE TWO THREE FOUR FIVE .....TEN |
| 2 | Under each column the respondents priority |
| . | number would be listed - each sheet would be |
| . | listed, one per row. |
| . | |
| 100 | |

Spreadsheets were established in computer files named ONEHUND, TWOHUND etc. As the survey allowed the respondent to list N/A (not applicable) or leave a blank, where the goal did not clearly apply to the individual, these responses were assigned the value of 0 for tracking. Those sheets containing an 'x' or a checkmark, or other marks which could not be related to a priority for the stated goal, were treated as invalid and that response sheet was not used in the

tabulation. Write-in lifestyle goals were solicited and would be listed separately.

Phase (2) - Data Input. Each survey sheet was reviewed by two individuals to insure accuracy. Data input was facilitated by the use of the spreadsheet allowing cursor movement across a row in both directions. This doubled the rate of data input. Individual survey response sheets were read down with right cursor movement, with the subsequent sheet being read up with left cursor movement. Invalid sheets were tagged for closer review and possible later tabulation. A listing of the write-in 'Added Lifestyle Goals' was made separately.

Phase (3) - Tabulation. Each spreadsheet was tabulated separately. Again, this method insured accuracy by providing a system of easy controls by counting the responses, 99 per spreadsheet. Each column was sorted to provide a grouping of the lifestyle goal priorities; each priority grouping counted by the computer, and the results printed. These results were then manually moved to a group tabulation spreadsheet, Appendix (I). Note that for each column a total of 99 appears providing the check that each number was counted for that particular lifestyle goal. After all valid sheets were counted, the resultant eight tabulation sheets were manually tabulated by transfer of the totals to yet another spreadsheet. The total of 733 valid surveys, not including those which were received from those officers reporting treatment for cardiovascular disease which were tabulated and reported separately, was used as the control total for this sheet. Appendix (J) contains this tabulation for those officers who reported a treatment history for cardiovascular problems; a similar procedure

was followed, resulting in a similar spreadsheet, Appendix (J1). As there were 24 valid responses from this group, that number was used as the control number for this tabulation. Finally, for ease in interpretation, the priorities were grouped as HIGH consisting of response in the 1-6 range, and LOW consisting of the range 7-LOWER including the Not Applicable response. This information is graphically presented in Appendix (K).

Phase (4) Added Goals Listing - The respondents were provided the opportunity to write in Lifestyle Goals and assign a number, relative to the goals provided in the survey. There were 152 write-in added goals. This listing appears as Appendix (L) in its entirety, sorted alphabetically. Note that many Added Goals appear more than once. The author edited these, standardized the wording where interpretation was clear that the respondent intended the same goal. A listing of the five Added Goals appearing most frequently is contained in Appendix (M).

## IV. CONCLUSIONS

The following conclusions can be drawn from the results of the research:

First; the Personnel Management Information System (PMIS) of the Coast Guard should incorporate a means to track significant health care data. The Coast Guard has an extensive system to track accidental fatalities and injury through the safety program. As a result, preventive measures are rapidly disseminated when fatalities occur, or unfavorable trends develop as a result of accidents. Preventive measures for personal health care are more subjective,

involve career objectives, as well as personal lifestyle differences, and therefore are more difficult to disseminate and measure subsequent results. Yet, awareness of trends such as the cardiovascular disease fatality rate could serve as a motivator for the involvement and response of personnel on a voluntary basis, if that information was available and disseminated. Health care data could include the following:

(1) The fatality information now being manually recorded by the Retired Affairs Branch in the Office of Personnel.
(2) Disability retirement information.
(3) Not Fit For Duty information relating to loss of productive man-hour resources.

Second; cardiovascular heart disease (CHD) is the primary medical cause of death in active duty Coast Guard personnel over the age of 35. Of a total of 29 medically related deaths, 26 were related to cardiovascular problems; Appendix (F). Although, the diagnostic information available on the decedent source cards is not conclusive, in the author's opinion there is enough information to draw the conclusion that cardiovascular health would clearly improve through the awareness of fitness and preventive health information in those personnel over the age of 35 on active duty in the Coast Guard.

Third, the senior officers of the Coast Guard are clearly aware that tobacco use is a health hazard. Seventy-one percent of the survey sample either listed tobacco use as 'clearly not applicable', indicating they are not smokers. Another nine percent indicated a high priority for quitting or reducing the use of tobacco. Information regarding the harmful effects of tobacco use has been give

wide dissemination in all forms of media. Therefore, the response of this group indicates they are responsive to health care information, when available.

Fourth; the group response concerning alcohol consumption is inconclusive. Forty-two percent of the survey group listed the reduction of alcohol consumption as clearly not applicable to them, while 25 percent listed a high priority (1-5) indicating a desire to reduce alcohol consumption. However, one might conclude that the incentive to reduce the use of alcohol is not clear to this group.

Fifth; there is no desire to reduce the use of medication, most likely due to relatively low medication usage.

Sixth; senior Coast Guard officers placed a high priority in controlling physical fitness. The lifestyle goals of losing weight, increasing physical activity, improving muscle tone and improving strength and flexibility all were given relative high priority. Additionally, health and fitness lifestyle goals appeared the most frequently as write-in added goals. This is another indicator that this group is responsive to information affecting health. However, from the tone of the comments provided by the respondents, the author concludes that the information needs to be better organized and more specific. The Coast Guard has placed an emphasis on weight control, however the motivators have been primarily in the category of weight loss for personal appearance purposes, rather than for health. The orientation of goals toward health improvement could make the weight control effort more positive and possibly produce more favorable results.

Seventh; stress and tension levels are high and senior officers strongly desire that they be reduced. Seventy-six percent of the survey group placed a high priority on reduction of stress and tension levels. Additionally, eight senior officers provided personal comments concerning stress levels. The following is one which is typical:

"We organizationally put our people in a pressure cooker atmosphere to start with and then raise or lower the flame. In many cases the organization is the stressor which is magnified by the influences of personality and inter-personnel relationships."

Eighth; many senior officers have established fitness programs, as indicated by the write-in lifestyle goals, where the words improve, or maintain, preceeded their personal program goals.

Ninth; there is no conclusive difference between the priority assigned to the stated lifestyle goals between those senior officers who had been treated for CHD and those who had not.

Tenth; the author has not drawn any conclusions based on the information provided by those officers who provided information pertaining to their history of cardiovascular treatment, listed in Appendix (H). This is due to the lack of definitive diagnosis information, without which one cannot determine the specific cardiovascular health problem being reported.

Eleventh; the interest in this research subject by senior officers in the Coast Guard is very high and is reflected by the high distributed survey/returned survey response rate of 79 percent.

## V. TYPICAL HEALTH & ASSESSMENT PROGRAM

A. PROGRAM - A recommended program similar to the one administered to the Air War College students and spouses is described below. Examples of reports and information related to the program are included in Appendicies (N), (O), and (P). The objective of this program is to analyze personal cardiovascular and stress conditions, motivate lifestyle changes as needed, and provide appropriate exercise and diet plans. The statistics which demonstrate the impact that such a program can have are provided as appendix (Q). The program is divided into four phases.

PHASE 1 INTRODUCTION - Provide the necessary information to those persons who may desire to participate in the program so that they will recognize the need for personal assessment, comprehend the process and recognize their responsibilities.

PHASE 2 GATHER DATA - Collect the necessary data to enable an analysis of the participant's cardiovascular condition. This is accomplished through laboratory analysis of the blood, prediction of body fat from circumference and height measurements, and completion of personal lifestyle, and history questions. One example of a typical comprehensive questionnaire is provided in Appendix (N).

PHASE 3 ASSESSMENT - Following collection of the data, an analysis is made and the participant is provided a Risk Factor Report, Appendix (O), along with the necessary information Appendix (P), enabling them to make a personal assessment.

PHASE 4 ADJUSTMENT - If necessary and/or desirable voluntarily make adjustments of controllable risk factors, or seek medical advise and/or assistance.

B. SUGGESTIONS FOR ACCOMPLISHMENT IN THE U.S. COAST GUARD

The author urges the appropriate responsible program director in Coast Guard Headquarters to organize and adopt a Cardiovascular Health and Assessment Program on a voluntary basis for active duty members over age 35. Within the military organizational framework of the U.S. Coast Guard, one could quickly conclude that a program which could improve the fitness and well being of the active duty force should be mandatory. The author urges that the program not be mandatory for two reasons. First, recognize the need for high motivation among the participants which can best be achieved by voluntary participation. Seeing one's peers involved enthusiastically generates more personal desire to be involved than even the strongest worded directive. Secondly, there is the need for participants to be accorded the privilege of confidentiality of information. Confidentiality of the information is extremely important in a program of this type. There are questions which should be raised concerning the involvement of Coast Guard medical authorities related to conflicts in responsibilities. These include the protection of the government's interest in both maintaining the health standards of the active duty force while also insuring that physical disability retirement policies and laws are judiciously administered. However, these questions are beyond the scope of the objective of this research project. The author believes that a management system which will both protect the government, while at the same time serve to enhance the fitness and health of the active duty force over the age of 35, can be structured. The following suggestions apply:

(1) Identify a small group to initiate participation. The response of the senior officers indicates positive acceptance and a high degree of willingness to participate in a program. This group would be ideal to begin a program. This approach will identify problems in the initial program and induce motivation in other groups.

(2) Provide information concerning the program, (Phase 1) through a newsletter type communication to each participant, describing objectives and procedures.

(3) Accomplish the data collection (Phase 2) in conjunction with the normal physical exam schedule. Individuals would indicate their desire to participate at the time of the physical and be provided the necessary blood analysis and the questionnaire to complete. (NOTE: The USAF has recently initiated a program which encourages personal health counseling by medical personnel. The time necessary to accomplish this was "produced" by extending some of the individual exam requirements to a two year interval, thereby reducing the physical work load. This has generally been accepted as an overall improvement in the quality of the physical.)

(4) A system to provide analysis of the data collected would be structured by the responsible program manager. This could be contracted for, or accomplished by staff with appropriate training. Accomplishment through computer modeling, would ease this burden significantly.

(5) Completion of Phases 3 & 4 would be the responsibility of each individual participant, after receipt of the risk factor report, Appendix (O) and the associated assessment information, Appendix (P).

## VI. RECOMMENDATION

This paper has substantiated that Cardiovascular Heart Disease (CHD) is the number one medical cause of deaths in personnel over 35 on active duty in the U.S. Coast Guard. Further, those Coast Guard personnel over 35 on active duty are receptive to information related to CHD and would adjust those lifestyle factors which have placed them at high risk. The high rate of response to the survey (79 percent) reveals a high level of interest within the survey group. The Air War College program has significantly influenced lifestyle attitudes as described in appendix (Q), which is indicative of the impact that a program as described can have. The U.S. Coast Guard could expect similar results and therefore the author recommends that a pilot program be initiated as described.

DEPARTMENT OF THE AIR FORCE
AIR WAR COLLEGE (AU)
MAXWELL AIR FORCE BASE, AL 36112-5522

APPENDIX (A)

15 November, 1984

REPLY TO ATTN OF DAAL - 212

SUBJECT CARDIOVASCULAR RESEARCH

TO Dear Fellow Coast Guard Officer:

1. I'm attending the U.S. Air Force Air War College (AWC) this year, and have selected as my research project, cardiovascular fitness in Coast Guard officers over 35 years old. I was prompted to select this subject when I became involved in a preventive program involving both military members and spouses of AWC students and staff. This program has emphasized that cardiovascular disease is the number one medical cause of death in personnel over 35 on active duty in the Armed Forces. For Coast Guard personnel, of the total deaths involving our active duty personnel over the age of 35 in the past 6 years, 28 were medically related. Cardiovascular disease accounted for 26 of these.

2. I hope to propose a similar preventive program for voluntary use to the Office of Health Services in a cooperative effort. For those individuals who choose to participate, the program could provide an evaluation of risk factors related to individual medical history, diet, family history and other life style considerations. The individual can then use this information for self-assessment and, if they so choose, initiate the recommended corrective/preventive action provided in the program. Voluntary personal involvement is what the proposed program is all about. If in a high risk category you could make a choice for a longer and healthier life through knowledge of your personal well-being.

3. I would greatly appreciate your assistance in completing and returning the attached survey. Please note that the survey is anonymous and will be used to provide only statistical data on the over 35 years of age officer corps.

4. Confidentiality through anonymity is assured. The program I have in mind is strictly voluntary. It will not mandate using Coast Guard medical resources unless you specifically request assistance.

5. Thanks very much for your help. Please take 5 minutes now to fill out the attached questionnaire and return in the enclosed envelope. In order to meet the academic schedule, I need your response by 14 December, '84. Again thanks.

V/R

J. C. STORM
Commander, USCG

APPENDIX (B)

# Q U E S T I O N N A I R E
## CARDIOVASCULAR DISEASE IN COAST GUARD OFFICERS OVER 35

1. HAVE YOU BEEN WITHIN THE PAST TEN YEARS, OR, ARE YOU NOW BEING TREATED AT A HEALTH FACILITY FOR A CARDIOVASCULAR (HEART) CONDITION?

_____YES _____NO

If the answer is yes please continue. If no please skip to question 7 on the back of this page.

2. HAVE YOU HAD, OR, ARE YOU NOW SCHEDULED FOR HEART BY PASS SURGERY?

_____YES _____NO

3. HAVE YOU BEEN RETURNED TO DUTY?

_____YES _____NO

4. ARE YOU FIT FOR FULL DUTY, INCLUDING SEA DUTY AND AVIATION DUTY INVOLVING OPERATIONAL FLYING?

_____YES _____NO

5. APPROXIMATELY HOW LONG WERE YOU IN-PATIENT, AND/OR, IN A NOT FIT FOR FULL DUTY STATUS AS A RESULT OF YOUR HEART CONDITION? PLEASE INCLUDE THE TIME YOU WERE NOT FIT FOR SEA AND AVIATION DUTY IF APPLICABLE.

_____YRS _____MOS

6. ARE YOU SUBJECT TO REVIEW BY A PHYSICAL EVALUATION BOARD?

_____YES _____NO

PLEASE TURN THE PAGE OVER NOW

APPENDIX (B cont'd)

7. WHAT ARE YOUR PERSONAL PRIORITIES IN TERMS OF IMPROVING YOUR LIFESTYLE? SOME IMPORTANT LIFESTYLE GOALS ARE LISTED BELOW. YOU MAY WRITE ADDITIONAL GOALS IN THE SPACES PROVIDED. PLEASE REVIEW THE LIST AND PLACE THE NUMBER '1' NEXT TO THE ITEM WHICH IS MOST IMPORTANT TO YOU, AND SO ON UNTIL ALL ITEMS ARE NUMBERED. (IF THERE ARE ITEMS WHICH CLEARLY DO NOT APPLY TO YOU, MARK 'N/A' NEXT TO THOSE ITEMS.)

_____ LOSE WEIGHT.

_____ INCREASE MY PHYSICAL ACTIVITY.

_____ QUIT OR REDUCE TOBACCO USE.

_____ REDUCE MY STRESS AND TENSION LEVEL.

_____ REDUCE MY ALCOHOL CONSUMPTION.

_____ IMPROVE MY OVERALL MUSCLE TONE.

_____ IMPROVE MY NUTRITION.

_____ DEVELOP NEW RECREATIONAL INTERESTS.

_____ IMPROVE MY STRENGTH AND FLEXIBILITY.

_____ REDUCE MEDICATION USAGE.

_____

_____

_____

_____

APPENDIX (C)

OFFICE OF HEALTH SERVICES
USCG HEADQUARTERS
CHIEF, SPECIAL MEDICAL OPERATIONS
SUGGESTED MODIFICATIONS TO SURVEY QUESTIONNAIRE

Note: These suggested modifications were received to late to incorporate in the survey questionnaire.

The author has taken the liberty to paraphrase the suggested modifications for the purposes of clarity, as they relate to the research report.

The suggested modifications pertain to question 1 & 4 of the research questionnaire. If they had been incorporated they would have made clearer the answers given to those questions.

Suggestion

1. Regarding the first question, suggest a change - if the answer is yes, it would be good to know what type of cardiovascular disease (or diagnosis if they know it) and what type of treatment was prescribed. As the question is currently written, someone with hypertension may answer yes although that may not meet your definition of cardiovascular disease. Likewise, someone with mitral valve prolapse, a newly discovered murmur, occasional PVC's, etc. may also answer yes. You would end up with very skewed data unless you were able to separate these folks from the arteriosclerotic cardiovascular disease group you are trying to identify. Having them report the type of treatment will also give you some suggestive data about the severity of symptoms and disease.

2. Regarding question 4, you probably need to take out the aviation duty. You can be fit for full duty but not fit for aviation. You might also think about changing the second part to read "have you had or are you scheduled for.....". There is a possibility within our system to be found not fit for duty and yet be retained on active duty until 20 years of service. Without this change, they would answer no to both parts of the question and I'm not sure you would know how to interpret that answer.

APPENDIX (D)

# CARDIOVASCULAR HEALTH IN SENIOR COAST GUARD OFFICERS
# RESEARCH SCHEDULE

| ACTION ITEM | TARGET |
|---|---|
| LTR TO OFFICE OF K | Oct 6 84 |
| FATALITY SURVEY | Oct 19 84 |
| FOLLOW UP TO K, COPY OF SURVEY | Nov 6 84 |
| SURVEY LETTERHEAD | Nov 7 84 |
| SURVEY QUESTIONNAIRE PILOT TEST | Nov 7 84 |
| SURVEY ENVELOPES | Nov 16 84 |
| PRINTING LTR/QUESTIONNAIRE | Nov 16 84 |
| SURVEY MAILING | Nov 30 84 |
| SURVEY SUSPENSE RETURN | Dec 30 84 |
| SURVEY 961 OFFICERS TALLEY | Jan 15 85 |
| SURVEY TALLY SMOOTH | Jan 15 85 |
| REPORT FIRST DRAFT | Jan 31 85 |
| FIRST DRAFT DUE | Feb 8 85 |
| FINAL REPORT | Mar 15 85 |

APPENDIX (E)

COAST GUARD PERSONNEL OVER THE AGE OF 35
19 OCTOBER 1984
LISTED BY CATEGORY - COMMISSIONED - WARRANT - ENLISTED
COMPLETED AS A PART OF THE AIR WAR COLLEGE RESEARCH PROJECT
CARDIOVASCULAR FITNESS IN SENIOR COAST GUARD OFFICERS
RESEARCHER CDR SPERRY C. STORM 214 34 2379 USCG
AWC CLASS OF 1985

| | |
|---|---|
| COMMISSIONED | 2157 |
| WARRANT | 1249 |
| ENLISTED | 3577 |
| TOTAL | 6983 |

APPENDIX (F)

FATALITY SURVEY
COAST GUARD ACTIVE DUTY PERSONNEL
PERIOD 01 JAN 79 - 19 OCT 84
SORTED ON BIRTHDATE
COMPLETED AS A PART OF THE AIR WAR COLLEGE RESEARCH PROJECT
CARDIOVASCULAR FITNESS IN SENIOR COAST GUARD OFFICERS
RESEARCHER CDR SPERRY C. STORM 214 34 2379 USCG
AWC CLASS OF 1985

| BIRTHDATE | DEATHDATE | MEDICAL | CV | CV DIAGNOSIS |
|---|---|---|---|---|
| | Dec 81 | | | BIRTHDATE ERROR |
| | Jan 82 | | | BIRTHDATE ERROR |
| | Jul 79 | | | BIRTHDATE ERROR |
| | Oct 81 | | | BIRTHDATE ERROR |
| | Oct 79 | | | BIRTHDATE ERROR |
| | Jul 83 | | | BIRTHDATE ERROR |
| Oct 23 | Jan 81 | X | X | CARDIO PULMONARY ARREST |
| Jan 25 | Feb 79 | | | |
| Sep 27 | Jan 84 | | | |
| Dec 27 | Feb 84 | X | X | ACUTE ANTEROSPETAL MYOCARDIA INFARCTION |
| Apr 29 | Jul 83 | X | X | CARDIAC ARREST |
| Mar 30 | Jul 83 | X | X | CARDIAC ARREST |
| Jan 31 | Dec 80 | X | X | HEART ATTACK |
| Aug 31 | Feb 79 | X | X | HEART ATTACK |
| Dec 31 | Sep 80 | X | X | HEART ATTACK |
| Oct 32 | Mar 81 | X | X | HEART ATTACK |
| May 34 | Jun 79 | X | X | HEART ATTACK |
| Jul 34 | Apr 79 | X | X | ACUTE MYOCARDIAL INFARCTION |
| Aug 34 | Apr 81 | X | X | CORONARY THROMBOSIS |
| Mar 35 | ? 79 | X | | STROKE (SEE FOOTNOTE 1) |
| Oct 36 | Oct 83 | X | X | MASSIVE HEART ATTACK |
| Dec 36 | Mar 80 | X | X | MYOCARDIAL INFARCTION |
| Mar 37 | Jul 83 | | | |
| Oct 37 | Nov 81 | | | |
| Jul 38 | May 83 | | | |
| Mar 39 | Mar 79 | X | X | HEART ATTACK |
| Feb 40 | Oct 80 | X | X | HEART ATTACK |
| Mar 40 | Oct 82 | X | X | ARTEROSCLEROTIC CV DISEASE |
| Apr 40 | May 79 | X | X | HEART FAILURE |
| Jul 40 | May 80 | | | |
| Oct 40 | Jun 83 | X | X | CARDIAC ARREST |
| Feb 41 | Jan 80 | | | |
| Sep 41 | Jan 81 | X | X | HEART ATTACK |
| Oct 41 | Jun 80 | X | X | HEART ATTACK |
| Apr 42 | Nov 79 | X | X | HEART ATTACK |
| Apr 42 | Jan 79 | | | |

APPENDIX (F)

| BIRTHDATE | DEATHDATE | MEDICAL | CV | CV DIAGNOSIS |
|---|---|---|---|---|
| Aug 42 | Aug 83 | X | X | MYOCARDIAL INFARCTION |
| Oct 42 | Aug 82 | | | |
| Jan 44 | Jul 79 | X | | RESPIRATORY ARREST |
| Oct 44 | Oct 79 | X | X | HEART FAILURE |
| May 45 | Jun 80 | | | |
| Sep 45 | Aug 81 | X | X | CARDIAC FAILURE |
| Dec 45 | Dec 79 | | | |
| Feb 46 | Feb 79 | X | X | CARDIAC ARREST |
| Jun 47 | Jan 80 | | | |
| Feb 48 | Nov 83 | | | |
| Apr 48 | Aug 81 | | | |
| May 48 | Jan 80 | | | |
| Jun 48 | Dec 79 | | | |
| Aug 48 | Apr 81 | X | | |
| Aug 48 | Jan 82 | | | |
| May 49 | May 82 | X | X | CARDIOPULMONARY ARREST |
| Sep 49 | Aug 81 | | | |
| Nov 49 | Jan 81 | | | |
| Dec 49 | Jun 82 | | | |
| | | 29 | 26 | OVER AGE 35 FATALITY EXPERIENCE SEE FOOTNOTE 1 |

| BIRTHDATE | DEATHDATE | MEDICAL | CV | CV DIAGNOSIS |
|---|---|---|---|---|
| May 50 | Mar 80 | | | |
| Jun 50 | Jan 82 | | | |
| Aug 50 | Jan 79 | | | |
| Dec 50 | Apr 79 | | | |
| Mar 51 | Feb 79 | | | |
| Apr 51 | Oct 80 | | | |
| May 51 | Jan 79 | | | |
| Jul 51 | Apr 84 | | | |
| Sep 51 | Jan 80 | | | |
| Nov 51 | Jan 82 | | | |
| Feb 52 | Oct 81 | | | |
| Sep 52 | Aug 81 | | | |
| Dec 52 | Jul 80 | | | |
| Aug 53 | Jan 82 | | | |
| Aug 53 | Dec 80 | | | |

FOOTNOTE 1. The data in Appendix (A), the cover letter for the survey lists 28 medically related deaths for active duty personnel over the age of thirty five (35). That number should be 29, as the stroke death was not counted due to an error caused by the ? appearing in the deathdate.

APPENDIX (F)

| BIRTHDATE | DEATHDATE | MEDICAL | CV | CV DIAGNOSIS |
|---|---|---|---|---|
| Aug 53 | Dec 80 | | | |
| Sep 53 | Jan 81 | X | X | THROMBOSIS OF AORTIC VALVE REPLACEMENT |
| Sep 54 | Jan 80 | | | |
| Jan 55 | Jun 79 | | | |
| Apr 55 | May 82 | | | |
| Jul 55 | Oct 81 | | | |
| Aug 55 | Aug 80 | | | |
| Sep 55 | Aug 81 | | | |
| Sep 55 | May 82 | | | |
| Dec 55 | Nov 79 | | | |
| Dec 55 | Jul 79 | | | |
| Jan 56 | Dec 79 | | | |
| Jan 56 | Oct 80 | | | |
| Apr 56 | Apr 79 | | | |
| Apr 56 | Aug 81 | | | |
| May 56 | Jan 80 | | | |
| May 56 | May 82 | | | |
| May 56 | Sep 79 | | | |
| Jun 56 | Jan 80 | | | |
| Jul 56 | Jan 80 | | | |
| Jul 56 | Feb 79 | | | |
| Sep 56 | Jun 82 | X | X | HEART FAILURE |
| Oct 56 | Jan 80 | | | |
| Jan 57 | Feb 79 | | | |
| Jan 57 | Feb 79 | | | |
| Feb 57 | Jan 80 | | | |
| Feb 57 | Aug 83 | | | |
| Feb 57 | Mar 81 | | | |
| Feb 57 | Sep 79 | | | |
| Mar 57 | Jan 82 | | | |
| Mar 57 | May 82 | | | |
| Apr 57 | Jun 82 | | | |
| May 57 | Jan 79 | | | |
| Jun 57 | Jan 80 | | | |
| Jul 57 | Jan 80 | | | |
| Jul 57 | Jul 79 | | | |
| Aug 57 | Aug 80 | | | |
| Aug 57 | Apr 81 | | | |
| Sep 57 | May 80 | | | |
| Dec 57 | Feb 83 | | | |
| Dec 57 | Oct 80 | | | |
| Dec 57 | Mar 80 | | | |
| Jan 58 | Jan 80 | | | |
| Jan 58 | Oct 81 | | | |
| Jan 58 | Sep 80 | | | |

APPENDIX (F)

| BIRTHDATE | DEATHDATE | MEDICAL | CV | CV DIAGNOSIS |
|---|---|---|---|---|
| Feb 58 | Dec 80 | | | |
| Feb 58 | Jan 80 | | | |
| Feb 58 | May 80 | | | |
| Mar 58 | Aug 79 | | | |
| Apr 58 | May 81 | | | |
| Apr 58 | Jan 80 | | | |
| Apr 58 | Feb 81 | | | |
| May 58 | Sep 81 | | | |
| Jun 58 | May 80 | | | |
| Jun 58 | Jul 79 | | | |
| Jul 58 | Nov 80 | X | X | CARDIAC FAILURE |
| Jul 58 | Jan 79 | | | |
| Jul 58 | Feb 82 | | | |
| Aug 58 | Nov 81 | | | |
| Sep 58 | Jan 82 | | | |
| Oct 58 | Sep 81 | X | X | CORONARY THROMBOSIS |
| Oct 58 | Jun 80 | | | |
| Dec 58 | Jun 80 | | | |
| Jan 59 | Jan 80 | | | |
| Jan 59 | Jan 80 | | | |
| Mar 59 | May 82 | | | |
| Apr 59 | Oct 81 | | | |
| May 59 | Jul 83 | X | | PULMONARY EDEMA |
| May 59 | Apr 84 | | | |
| Mar 59 | Jul 79 | | | |
| Jun 59 | Jan 80 | | | |
| Jul 59 | Feb 82 | | | |
| Aug 59 | Dec 80 | X | | |
| Aug 59 | May 83 | | | |
| Sep 59 | May 80 | | | |
| Sep 59 | Apr 79 | | | |
| Oct 59 | Aug 80 | | | |
| Oct 59 | Jul 81 | | | |
| Dec 59 | Jul 80 | | | |
| Jan 60 | Aug 80 | X | | APLASTIC ANEMIA |
| Mar 60 | Jan 80 | | | |
| Mar 60 | Jun 83 | | | |
| Apr 60 | Mar 79 | | | |
| Apr 60 | Oct 83 | | | |
| May 60 | Nov 82 | | | |
| May 6 | Jul 83 | | | |
| Jun 60 | Jan 80 | | | |
| Jun 60 | Dec 83 | | | |
| Jul 60 | Apr 83 | | | |
| Aug 60 | Jul 83 | | | |
| Oct 60 | Jan 83 | | | |

APPENDIX (F)

| BIRTHDATE | DEATHDATE | MEDICAL | CV | CV DIAGNOSIS |
|---|---|---|---|---|
| Oct 60 | Mar 81 | | | |
| Nov 60 | Jul 82 | | | |
| Nov 60 | Dec 80 | | | |
| Dec 60 | Dec 83 | | | |
| Dec 60 | Aug 83 | | | |
| Feb 61 | Feb 79 | | | |
| Feb 61 | Oct 81 | | | |
| Apr 61 | Aug 81 | | | |
| Apr 61 | May 81 | | | UNKNOWN |
| Apr 61 | Jan 80 | | | |
| May 61 | Jul 81 | | | |
| Jun 61 | Dec 82 | | | |
| Jun 61 | Jan 80 | | | |
| Jul 61 | Dec 80 | X | | CANCER |
| Jul 61 | Jul 83 | | | |
| Jul 61 | Sep 83 | | | |
| Aug 61 | Sep 82 | | | |
| Oct 61 | Jan 82 | | | |
| Nov 61 | Nov 82 | | | |
| Nov 61 | Oct 79 | | | |
| Nov 61 | Jan 80 | | | |
| Mar 62 | Nov 83 | | | |
| Mar 62 | Oct 79 | | | |
| Mar 62 | Oct 82 | | | |
| Mar 62 | Jul 83 | | | |
| Mar 62 | Jan 83 | | | |
| Jun 62 | Jun 80 | | | |
| Jun 62 | Dec 81 | | | |
| Aug 62 | Jan 83 | | | |
| Aug 62 | Jan 80 | | | |
| Oct 62 | Nov 82 | | | |
| Oct 62 | Dec 81 | | | |
| Nov 62 | Dec 83 | | | |
| Dec 62 | Aug 83 | | | |
| Apr 63 | Jan 84 | | | |
| May 63 | May 83 | | | |
| Jul 63 | Jul 82 | | | |

SURVEY DISTRIBUTION AND RETURN
SENIOR COAST GUARD OFFICERS
COMPLETED AS A PART OF THE AIR WAR COLLEGE RESEARCH PROJECT
CARDIOVASCULAR FITNESS IN SENIOR COAST GUARD OFFICERS
RESEARCHER CDR SPERRY C. STORM 214 34 2379 USCG
AWC CLASS OF 1985

TOTAL MAILING.....961
RETURNED.....825
USABLE.....760
YES TO QUEST 1....27
NO TO QUEST 1....733
UNUSABLE.....57
INVALID RESPONSE..28
LATE RECEIPT.....29
UNDELIVERED BY POST OFFICE..8
UNACCOUNTED FOR, NOT RETURNED.....136
TOTAL MAILING.....961

QUESTION 1. HAVE YOU BEEN WITHIN THE PAST TEN YEARS, OR, ARE YOU NOW BEING TREATED AT A HEALTH FACILITY FOR A CARDIOVASCULAR (HEART) CONDITION? If the answer to this question was yes, the response was tabulated separately.

TOTAL SURVEY SAMPLE WITH VALID, USABLE RESPONSES = 760

RESPONSE PERCENTAGE = 79.08%

APPENDIX (H)

CARDIOVASCULAR EXPERIENCE SURVEY
SENIOR COAST GUARD OFFICERS ON ACTIVE DUTY
OVER AGE 35 - - 27 RESPONDENTS
COMPLETED AS A PART OF THE AIR WAR COLLEGE RESEARCH PROJECT
CARDIOVASCULAR FITNESS IN SENIOR COAST GUARD OFFICERS
RESEARCHER CDR SPERRY C. STORM 214 34 2379 USCG
AWC CLASS OF 1985

1. HAVE YOU BEEN WITHIN THE PAST TEN YEARS, OR, ARE YOU NOW BEING TREATED AT A HEALTH FACILITY FOR A CARDIOVASCULAR (HEART) CONDITION?

A TOTAL OF 27 ACTIVE DUTY SENIOR OFFICERS OVER THE AGE OF 35 RESPONDED YES TO THIS QUESTION. THEY WERE THEN ASKED TO ANSWER THE FOLLOWING QUESTIONS.

2. HAVE YOU HAD, OR, ARE YOU NOW SCHEDULED FOR HEART BY PASS SURGERY?

___3___ YES ___24___ NO

3. HAVE YOU BEEN RETURNED TO DUTY?

___25___ YES ___2___ NO

4. ARE YOU FIT FOR FULL DUTY, INCLUDING SEA DUTY AND AVIATION DUTY INVOLVING OPERATIONAL FLYING?

___19___ YES ___6___ NO

___2___ DON'T KNOW

5. APPROXIMATELY HOW LONG WERE YOU IN-PATIENT, AND/OR, IN A NOT FIT FOR FULL DUTY STATUS AS A RESULT OF YOUR HEART CONDITION? PLEASE INCLUDE THE TIME YOU WERE NOT FIT FOR SEA AND AVIATION DUTY IF APPLICABLE.

___10___ YRS ___5.5___ MOS
REPRESENTS AN AGGREGATE TOTAL
FOR 25 RESPONDENTS
(2 DID NOT KNOW)

6. ARE YOU SUBJECT TO REVIEW BY A PHYSICAL EVALUATION BOARD?

___5___ YES ___21___ NO

___1___ DID NOT KNOW

# SURVEY RESPONSE FOR LIFESTYLE QUESTIONS

SEVEN GROUPS OF 99 EACH, LAST GROUP HAS 40. TOTAL=733

| GROUP-?NR | | N/A | ONE | TWO | THREE | FOUR | FIVE | SIX | SEVEN | EIGHT | NINE | TEN | LOWER | C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ONE | 1 | 30 | 27 | 12 | 8 | 5 | 6 | 6 | 1 | 1 | 3 | 0 | | |
| | 2 | 9 | 13 | 31 | 15 | 11 | 7 | 6 | 4 | 2 | 1 | 0 | | |
| | 3 | 74 | 8 | 2 | 0 | 3 | 4 | 2 | 2 | 3 | 1 | 0 | | |
| | 4 | 17 | 15 | 16 | 9 | 5 | 10 | 10 | 8 | 8 | 1 | 0 | | |
| | 5 | 44 | 2 | 5 | 6 | 4 | 7 | 9 | 9 | 10 | 3 | 0 | | |
| | 6 | 10 | 8 | 19 | 20 | 17 | 11 | 6 | 5 | 3 | 0 | 0 | | |
| | 7 | 19 | 7 | 6 | 5 | 13 | 16 | 11 | 14 | 4 | 4 | 0 | | |
| | 8 | 20 | 6 | 2 | 7 | 8 | 10 | 18 | 18 | 7 | 2 | 1 | | |
| | 9 | 16 | 5 | 4 | 19 | 18 | 12 | 11 | 6 | 7 | 1 | 0 | | |
| | 10 | 87 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 2 | 5 | | |
| TWO | 1 | 17 | 26 | 19 | 11 | 7 | 3 | 8 | 3 | 2 | 2 | 1 | | |
| | 2 | 8 | 14 | 27 | 13 | 7 | 14 | 8 | 5 | 3 | | | | |
| | 3 | 68 | 9 | 4 | 1 | 2 | 1 | 1 | 2 | 3 | 2 | 5 | 1 | |
| | 4 | 12 | 26 | 6 | 14 | 9 | 7 | 17 | 1 | 5 | 1 | 1 | | |
| | 5 | 43 | 1 | 4 | 2 | 10 | 6 | 3 | 15 | 7 | 6 | 2 | | |
| | 6 | 9 | 5 | 16 | 22 | 14 | 15 | 7 | 7 | 3 | 1 | 0 | 0 | |
| | 7 | 12 | 2 | 10 | 14 | 13 | 14 | 12 | 15 | 7 | | | | |
| | 8 | 26 | 1 | 2 | 3 | 8 | 15 | 14 | 14 | 12 | 4 | | | |
| | 9 | 8 | 4 | 8 | 15 | 21 | 14 | 17 | 5 | 4 | 3 | 0 | | |
| | 10 | 70 | 2 | 2 | 1 | 2 | | | 6 | 7 | 6 | 3 | | |
| THREE | 1 | 17 | 30 | 17 | 14 | 3 | 2 | 3 | 2 | 3 | 4 | 3 | 1 | |
| | 2 | 5 | 19 | 24 | 17 | 13 | 9 | 7 | 3 | 1 | | | 1 | |
| | 3 | 61 | 9 | 7 | 2 | 7 | 1 | 1 | 6 | | 3 | 2 | | |
| | 4 | 12 | 16 | 10 | 14 | 11 | 13 | 7 | 8 | 6 | | 1 | 1 | |
| | 5 | 40 | 2 | 0 | 3 | 3 | 4 | 10 | 11 | 14 | 6 | 3 | 3 | |
| | 6 | 6 | 2 | 12 | 16 | 21 | 19 | 7 | 9 | 6 | | | 1 | |
| | 7 | 15 | 4 | 13 | 4 | 9 | 8 | 16 | 16 | 6 | 6 | 1 | 1 | |
| | 8 | 19 | 1 | 2 | 9 | 7 | 10 | 17 | 13 | 13 | 4 | 3 | 1 | |
| | 9 | 4 | 5 | 7 | 14 | 15 | 20 | 16 | 9 | 6 | 2 | | 1 | |
| | 10 | 68 | 3 | 1 | 2 | 2 | 3 | 2 | 3 | 5 | 5 | 3 | 2 | |
| [illegible] | 1 | 22 | 17 | 17 | 11 | 11 | 4 | 4 | 9 | 1 | 2 | 1 | | |
| | 2 | 10 | 16 | 16 | 23 | 15 | 9 | 4 | 4 | 2 | | | | |
| | 3 | 73 | 8 | 3 | 1 | 3 | 0 | 2 | 2 | 1 | 3 | 2 | 1 | |
| | 4 | 4 | 28 | 16 | 10 | 7 | 16 | 12 | 3 | 3 | | | | |
| | 5 | 37 | 2 | 0 | 6 | 2 | 9 | 6 | 13 | 16 | 6 | 1 | 1 | |
| | 6 | 11 | 9 | 10 | 18 | 11 | 16 | 14 | 7 | 2 | 1 | | 0 | |
| | 7 | 11 | 3 | 9 | 11 | 22 | 15 | 9 | 10 | 5 | 4 | | | |
| | 8 | 15 | 1 | 7 | 5 | 10 | 8 | 19 | 20 | 9 | 3 | 2 | | |
| | 9 | 7 | 4 | 15 | 8 | 13 | 15 | 15 | 8 | 10 | 4 | | | |
| | 10 | 78 | | 1 | 1 | | 1 | 2 | 3 | 3 | 4 | 6 | | |
| FIVE | 1 | 10 | 23 | 19 | 12 | 9 | 12 | 8 | 2 | 2 | 1 | 1 | | |
| | 2 | 5 | 20 | 32 | 16 | 6 | 6 | 8 | 3 | 3 | | | | |
| | 3 | 70 | 15 | 2 | 1 | 3 | 1 | 1 | 3 | | 3 | | | |
| | 4 | 10 | 13 | 9 | 15 | 15 | 12 | 13 | 8 | 4 | | | | |
| | 5 | 36 | 2 | 2 | 3 | 3 | 6 | 6 | 14 | 23 | 4 | | | |
| | 6 | 3 | 9 | 17 | 18 | 14 | 22 | 8 | 5 | 1 | 2 | | | |
| | 7 | 16 | 3 | 6 | 13 | 10 | 13 | 16 | 13 | 6 | 3 | | | |
| | 8 | 14 | 3 | 2 | 8 | 11 | 10 | 12 | 18 | 14 | 7 | | | |
| | 9 | 10 | 3 | 9 | 8 | 21 | 11 | 14 | 14 | 6 | 2 | 1 | | |
| | 10 | 77 | 1 | | 1 | 1 | 1 | 3 | 1 | 2 | 6 | 6 | | |
| SIX | 1 | 23 | 31 | 13 | 10 | 2 | 8 | 6 | 1 | 3 | 1 | 1 | | |
| | 2 | 11 | 18 | 25 | 15 | 9 | 7 | 7 | 6 | 1 | | | | |
| | 3 | 74 | 11 | 4 | 3 | 2 | 1 | 1 | | | 2 | 1 | | |
| | 4 | 12 | 18 | 15 | 10 | 8 | 15 | 9 | 6 | 3 | 3 | | | |
| | 5 | 39 | 2 | 2 | 6 | 5 | 5 | 5 | 15 | 15 | 4 | | | |
| | 6 | 9 | 6 | 14 | 24 | 15 | 13 | 7 | 9 | 2 | | | | |
| | 7 | 12 | 3 | 7 | 12 | 16 | 13 | 13 | 17 | 4 | 1 | 1 | | |
| | 8 | 15 | 1 | 1 | 4 | 18 | 14 | 14 | 16 | 9 | 7 | | | |
| | 9 | 9 | 7 | 10 | 11 | 18 | 12 | 17 | 6 | 7 | 2 | | | |
| | 10 | 83 | | | | | 2 | 1 | | 3 | 4 | 6 | | |

File: COMPFINAL1

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SEV[illegible] | 1 | 18 | 30 | 12 | 9 | 8 | 7 | 1 | 8 | 3 | 2 | 1 | | |
| | 2 | 7 | 22 | 30 | 9 | 10 | 13 | 2 | 3 | 3 | | | | |
| | 3 | 65 | 10 | 5 | 2 | 5 | 3 | | 3 | 3 | 2 | 1 | | |
| | 4 | 15 | 12 | 16 | 14 | 10 | 5 | 15 | 7 | 4 | 1 | | | |
| | 5 | 48 | 1 | 2 | 1 | 4 | 6 | 6 | 9 | 15 | 6 | 1 | | |
| | 6 | 8 | 8 | 7 | 25 | 17 | 15 | 14 | 2 | 1 | 2 | | | |
| | 7 | 12 | 3 | 7 | 9 | 14 | 18 | 11 | 17 | 7 | 1 | | | |
| | 8 | 18 | 2 | 3 | 8 | 10 | 10 | 15 | 18 | 10 | 3 | 1 | 1 | |
| | 9 | 11 | 3 | 11 | 17 | 14 | 11 | 18 | 7 | 3 | 3 | | | |

File: APPENDIX.J



APPENDIX (J)

# RESPONSE PRIORITIES (APPENDIX J)

Key: N/A=Clearly did not apply to respondent

Lower=Respondent chose a lower priority than provided for in survey,e.g.a priority lower than '10'

TABULATION FOR THOSE OFFICERS WHO HAD NO PREVIOUS TREATMENT FOR CARDIOVASCULAR DISEASE

SAMPLE SIZE IS 733

| QUEST NR | N/A | ONE | TWO | THREE | FOUR | FIVE | SIX | SEVEN | EIGHT | NINE | TEN | LOWER | CHECK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 143 | 194 | 116 | 83 | 46 | 43 | 38 | 28 | 17 | 16 | 8 | 1 | 733 |
| 2 | 57 | 132 | 196 | 114 | 74 | 69 | 43 | 28 | 18 | 1 | 0 | 1 | 733 |
| 3 | 520 | 71 | 28 | 10 | 25 | 11 | 8 | 19 | 10 | 17 | 12 | 2 | 733 |
| 4 | 87 | 138 | 96 | 91 | 68 | 83 | 84 | 42 | 35 | 6 | 2 | 1 | 733 |
| 5 | 304 | 12 | 17 | 29 | 32 | 49 | 47 | 91 | 103 | 36 | 9 | 4 | 733 |
| 6 | 57 | 48 | 98 | 150 | 117 | 120 | 71 | 47 | 18 | 6 | 0 | 1 | 733 |
| 7 | 103 | 29 | 60 | 71 | 103 | 98 | 95 | 107 | 44 | 20 | 2 | 1 | 733 |
| 8 | 134 | 15 | 19 | 45 | 76 | 81 | 119 | 125 | 78 | 32 | 7 | 2 | 733 |
| 9 | 70 | 31 | 68 | 96 | 128 | 101 | 112 | 61 | 45 | 18 | 1 | 2 | 733 |
| 10 | 575 | 7 | 4 | 8 | 10 | 9 | 11 | 16 | 23 | 31 | 36 | 3 | 733 |

File: APPENDIX.J1



APPENDIX (J-1)

# RESPONSE PRIORITIES (APPENDIX J-1)

Key: N/A-Clearly did not apply to respondent

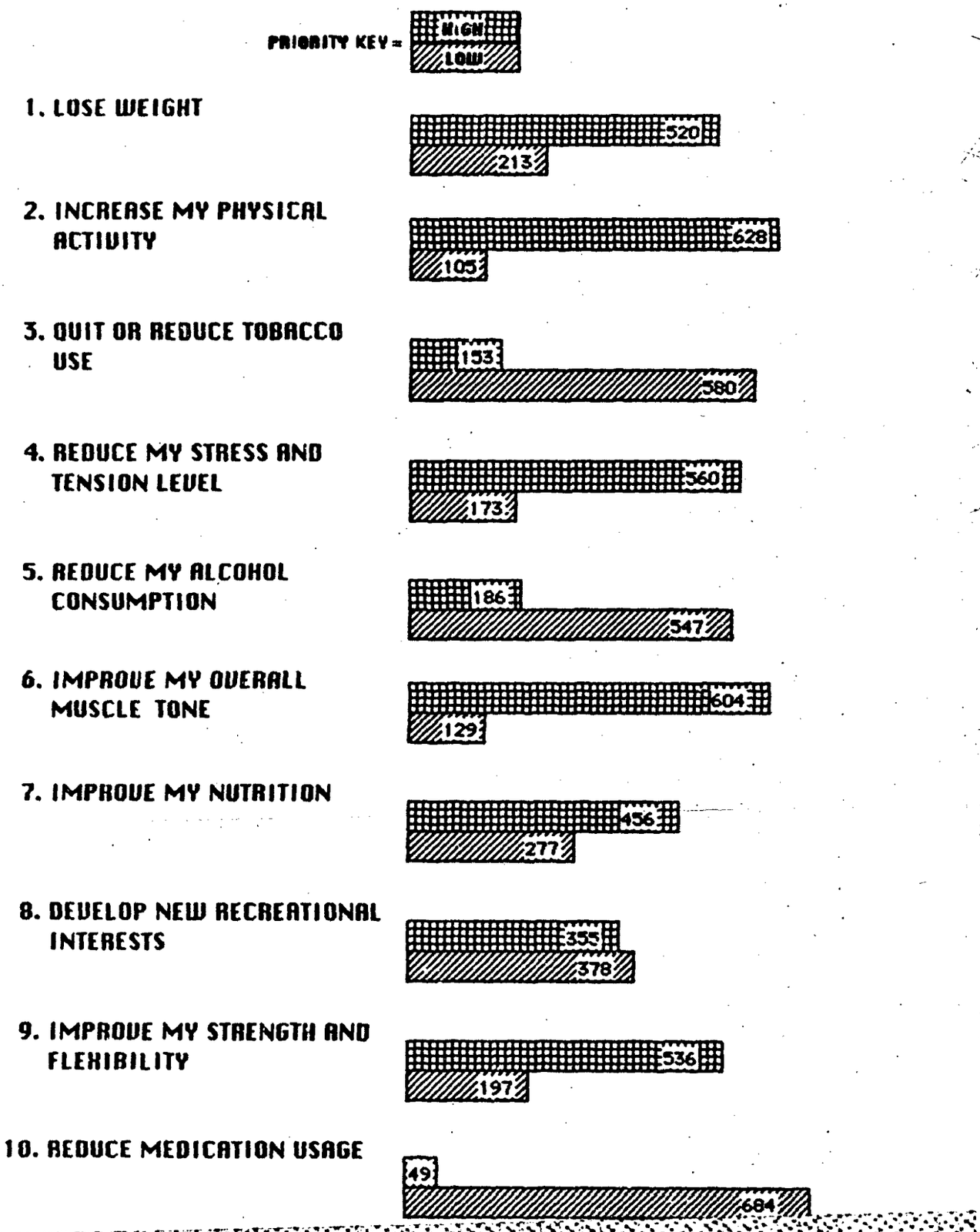
Lower-Respondent chose a lower priority than provided for in survey,e.g.a priority lower than '10'

TABULATION FOR THOSE OFFICERS WHO HAD RECEIVED PREVIOUS TREATMENT FOR CARDIOVASCULAR DISEASE

SAMPLE SIZE IS 24 (3 INVALID RESPONSES) TOTAL RESPONSE = 27

| QUEST NR | N/A | ONE | TWO | THREE | FOUR | FIVE | SIX | SEVEN | EIGHT | NINE | TEN | LOWER | CHECK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 8 | 8 | 5 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 24 |
| 2 | 1 | 4 | 6 | 7 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 24 |
| 3 | 18 | 2 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 24 |
| 4 | 2 | 6 | 3 | 3 | 5 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 24 |
| 5 | 12 | 0 | 0 | 0 | 1 | 1 | 1 | 3 | 3 | 3 | 0 | 0 | 24 |
| 6 | 2 | 6 | 3 | 3 | 5 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 24 |
| 7 | 6 | 1 | 3 | 3 | 3 | 3 | 3 | 2 | 0 | 0 | 0 | 0 | 24 |
| 8 | 7 | 1 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | 0 | 0 | 0 | 24 |
| 9 | 5 | 0 | 1 | 4 | 0 | 3 | 3 | 5 | 2 | 1 | 0 | 0 | 24 |
| 10 | 17 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 2 | 0 | 1 | 0 | 24 |

# PERSONAL PRIORITIES FOR LIFESTYLE GOALS



APPENDIX (L)

| ADDED LIFE STYLE GOALS (SORTED ALPHABETICALLY) | PRIORITY (DESIGNATED BY (RESPONDER) |
|---|---|
| ACHIEVE & MAINTAIN JOB SATISFACTION | 1 |
| BE A BETTER CHRISTIAN | 1 |
| BE AN EFFECTIVE OFFICER | 3 |
| BE AVAILABLE TO FAMILY MEMBERS | 1 |
| BE CONTENT & HAPPY | 1 |
| BEAT 35:00 FOR 10K | 4 |
| BECOME A FASTER RUNNER 10K - 34MINS | 1 |
| BENCH PRESS 250 LBS | 3 |
| BETTER PRIORITIZE USE OF OFF-DUTY TIME | 2 |
| BETTER TIME MGT TO PROVIDE REC TIME | 5 |
| CARDIOVASCULAR EXERCISE | 1 |
| CHANGE CAREER | 1 |
| CHANGE CAREERS/REDUCE COMMUTING/REDUCE FAMILY SEPARATION | 1 |
| CHANGE TYPE OF PHYSICAL ACTIVITY | 2 |
| CHANNEL MY TECHNICAL & MANAGEMENT EXPERTISE TOWARD POST-RETIREMENT EMPLOYMENT | 1 |
| CLIMB SNAKE PATH AT MASADA,ISRAEL | 1(b) |
| COMMUNICATING MORE WITH FAMILY TO RELIEVE STRESS | 2 |
| CONSIDER CAREER OPTIONS | 2 |
| CONTINUE RUNNING IN EXCESS OF 1500 MILES ANNUALLY | 1 |
| DECIDE WHAT TO DO UPON RETIREMENT | 1 |
| DEVELOP ACHIEVE BETTER BALANCE BETWEEN JOB & HOME/FAMILY | 1 |
| DEVELOP NEW SKILLS | 5 |
| DEVOTE MORE TIME TO FAMILY RELATIONS | 1 |
| DISCARD QUESTIONNAIRES | 8 |
| DOING MORE ACTIVE THINGS WITH FAMILY | 1 |
| DON'T WORRY SO MUCH | 4 |
| EXPAND MY HORIZON OF ACQUAINTANCES | 5 |
| FEEL BETTER | 2 |
| FIND A NICE HOME WHEN TRANSFERRED THAT'S AFFORDABLE | 2 |
| FIND POST RETIREMENT EMPLOYMENT | 1 |
| FIND TIME FOR RECREATIONAL INTERESTS I ALREADY HAVE | 3 |
| FOCUS ON MOST REALISTIC MIL RETIREMENT ALTERNATIVES | 2 |
| GAIN BETTER CONTROL OF MY OWN TIME | 7 |
| GET AMPLE SLEEP | 4 |
| GET ENOUGH SLEEP | 6 |
| GET OUT OF DEBT | 3 |
| GET PROMOTED | 1 |
| GET PROMOTED AS INFLUENCED BY PERCEIVED LIFESTYLE | 1 |
| HAVE MORE SEX | 1 |
| IMPROVE CARIDOVASCULAR CIRCULATION/LONGEVITY | 1 |
| IMPROVE FINANCIAL POSITION | 3 |
| IMPROVE FRIENDSHIPS | 4 |
| IMPROVE INTELLECTUAL DEVELOPMENT | 2 |
| IMPROVE MOGUL SKIIING | 5 |

| | |
|---|---|
| IMPROVE MY ABILITY TO SORT LIFE-STYLE ISSUES BASED UPON TRUE RELEVANCE | 3 |
| IMPROVE MY EFFICIENCY IN USE OF TIME | 1 |
| IMPROVE MY FAMILY LIFE | 4 |
| IMPROVE MY FAMILY RELATIONSHIPS | 2 |
| IMPROVE MY INTRA-FAMILY RELATIONSHIPS | 2 |
| IMPROVE MY MENTAL WELL-BEING | 1 |
| IMPROVE MY SELF-IMAGE | 1 |
| IMPROVE PERSONAL RELATIONSHIPS (FAMILY,ETC) | 4 |
| IMPROVE POST RETIREMENT INCOME | 3 |
| IMPROVE POSTURE | 1 |
| IMPROVE RUNNING SPEED | 1 |
| IMPROVE WINDSURFING | 7 |
| IMPROVE/MAINTAIN MY CARDIOVASCULAR FITNESS | 1 |
| INCREASE EDUCATION | 2 |
| INCREASE ENDURANCE | 1 |
| INCREASE ENDURANCE | 2 |
| INCREASE FAMILY RECREATIONAL ACTIVITIES | 1 |
| INCREASE INCOME SIGNIFICANTLY | 2 |
| INCREASE JOB SATISFACTION | 3 |
| INCREASE MY DISPOSABLE INCOME | 1 |
| INCREASE PERSONAL KNOWLEDGE | 4 |
| INCREASE PRIVATE TIME | 3 |
| INCREASE SEX ACTIVITY | 3 |
| KEEP MENTALLY PHYSICALLY ACTIVE | 2.5 |
| LOSE FEAR OF TRYING SOMETHING NEW | 8 |
| MAINTAIN CARDIOVASCULAR FITNESS | 1 |
| MAINTAIN CARDIOVASCULAR FITNESS | 1 |
| MAINTAIN CURRENT FITNESS | 1 |
| MAINTAIN CURRENT LEVEL OF PHYSICAL ACTIVITY | 0 |
| MAINTAIN GOOD HEALTH | 1 |
| MAINTAIN LOW STRESS LEVELS | 2 |
| MAINTAIN MY AERBIC CONDITIONING PROGRAM | 1 |
| MAINTAIN MY CURRENT FITNESS PROGRAM | 1 |
| MAINTAIN MY CURRENT WEIGHT | 1 |
| MAINTAIN MY JOGGING PROGRAM | 1 |
| MAINTAIN PHYSICAL FITNESS | 1 |
| MAINTAIN PRESENT PHYSICAL ACTIVITY | 2 |
| MAINTAIN PROPER DIET | 3 |
| MAINTAIN REGULAR LIFESTYLE | 1 |
| MAINTAIN WEIGHT | 3 |
| MAINTAIN WEIGHT | 2 |
| MAINTAIN WEIGHT | 3 |
| MAINTAIN WEIGHT | 3 |
| MAKE MORE MONEY | 1 |
| MAKE MORE MONEY | 3 |
| MAKE MORE MONEY | 2 |
| MAKE MORE MONEY | 1 |
| MANAGING FINANCES BETTER TO GAIN "SPENDING MONEY" | 3 |
| MINIMIZE EYE STRAIN THROUGH QUESTIONNAIRE REDUCTION | 4 |
| MORE SEX | 4 |

| | |
|---|---|
| MORE SEX ____ TIMES PER DAY | 0 |
| MORE TIME FOR PERSONAL PURSUITS | 1 |
| MOVE TO A LESS CONGESTED AREA | 6 |
| OBTAIN RELIEF FROM ARTHRITIS/BURSITIS PAIN | 2 |
| PARTICIPATE MORE IN MY RECREATIONAL INTEREST | 9 |
| PLAY MORE TENNIS | .5 |
| POSITIVE MENTAL ATTITUDE | 1 |
| POSITIVE PHYSICAL ATTITUDE | 2 |
| POST MILITARY CAREER SATISFACTION | 5(a) |
| PRACTICE A LIFESTYLE WHICH WILL MAKE ME A BETTER HUSBAND & FATHER | 1 |
| PREPARE FOR A SECOND CAREER | 1 |
| PREPARE FOR RETIREMENT | 1 |
| PROLONG LIFESPAN | 2 |
| PUT MORE EFFORT INTO MAKING MY MARRIAGE SUCCEED | 3 |
| QUALITIY OF FAMILY LIFE, MORE TIME WITH FAMILY | 1 |
| QUIT/REDUCE COFFEE CONSUMPTION | 9 |
| READ MORE | 2 |
| RECOVER FROM TORN A. TENDON | 1 |
| REDUCE BLOOD LEVELS OF CHLOESTEROL AND TRIGLYCERIDES | 3 |
| REDUCE CAFFEINE | 1 |
| REDUCE CAFFEINE INTAKE | 5.5 |
| REDUCE COFFEE CONSUMPTION | 7 |
| REDUCE COFFEE CONSUMPTION | 2 |
| REDUCE HOURS/WEEK INVOLVE IN JOB (STRESS), NOW APPROX 70 HR/WK | 3 |
| REDUCE RISK OF DEATH | 1 |
| REDUCE WORRY ABOUT HEART ATTACKS | 2 |
| REDUCE/COPE WITH LOWER BACK PAIN | 4 |
| RETIRE | 1 |
| RETIRE IN COMFORTABLE CIRCUMSTANCES | 2 |
| SEEK YE FIRST THE KINGDOM OF GOD, AND HIS RIGHTEOUSNESS | 1 |
| SETTLE MY FAMILY IN AN AREA THAT WE LIKE TO LIVE | 2 |
| SKI THE ADVANCED SLOPES AT SEVEN SPRINGS | 1(a) |
| SPECIAL ATTENTION TO MY FAMILY | 2 |
| SPEND MORE MEANINGFUL TIME WITH FAMILY | 1 |
| SPEND MORE TIME WITH MY FAMILY | 1 |
| SPEND MORE TIME WITH THE FAMILY | 1 |
| SPIRITUAL GROWTH | 1 |
| START COMMERCIAL BUSINESS | 1 |
| STAY HALF WAY HEALTHY | 1 |
| STAY IN NORTHERN CALIFORNIA | 1 |
| STAY IN TUNE WITH GOD | 1 |
| STAY SINGLE | 5 |
| STOP BREATHING SECOND HAND SMOKE | 4 |
| TAKE REGULAR LEAVE, TRIPS, ETC | 2 |
| THINK BETTER | 1 |
| USE MY TIME MORE EFFICIENTLY | 3 |
| WARD OFF OLD AGE | 1 |
| WIFE CAREER RE-START | 1A |

APPENDIX (M)

| ADDED LIFE STYLE GOALS APPEARING THE MOST FREQUENTLY | PRIORITY |
|---|---|
| **HEALTH & FITNESS - 49 OCCURRENCES** | |
| BEAT 35:00 FOR 10K | 4 |
| BECOME A FASTER RUNNER 10K - 34MINS | 1 |
| BENCH PRESS 250 LBS | 3 |
| CARDIOVASCULAR EXERCISE | 1 |
| CONTINUE RUNNING IN EXCESS OF 1500 MILES ANNUALLY | 1 |
| FEEL BETTER | 2 |
| GET AMPLE SLEEP | 4 |
| GET ENOUGH SLEEP | 6 |
| IMPROVE CARDIOVASCULAR CIRCULATION/LONGEVITY | 1 |
| IMPROVE MOGUL SKIING | 5 |
| IMPROVE POSTURE | 1 |
| IMPROVE RUNNING SPEED | 1 |
| IMPROVE WINDSURFING | 7 |
| IMPROVE/MAINTAIN MY CARDIOVASCULAR FITNESS | 1 |
| INCREASE ENDURANCE | 1 |
| INCREASE ENDURANCE | 2 |
| KEEP MENTALLY PHYSICALLY ACTIVE | 2.5 |
| MAINTAIN CARDIOVASCULAR FITNESS | 1 |
| MAINTAIN CARDIOVASCULAR FITNESS | 1 |
| MAINTAIN CURRENT FITNESS | 1 |
| MAINTAIN CURRENT LEVEL OF PHYSICAL ACTIVITY | 0 |
| MAINTAIN GOOD HEALTH | 1 |
| MAINTAIN MY AEROBIC CONDITIONING PROGRAM | 1 |
| MAINTAIN MY CURRENT FITNESS PROGRAM | 1 |
| MAINTAIN MY CURRENT WEIGHT | 1 |
| MAINTAIN MY JOGGING PROGRAM | 1 |
| MAINTAIN PHYSICAL FITNESS | 1 |
| MAINTAIN PRESENT PHYSICAL ACTIVITY | 2 |
| MAINTAIN PROPER DIET | 3 |
| MAINTAIN WEIGHT | 3 |
| MAINTAIN WEIGHT | 2 |
| MAINTAIN WEIGHT | 3 |
| MAINTAIN WEIGHT | 3 |
| OBTAIN RELIEF FROM ARTHRITIS/BURSITIS PAIN | 2 |
| POSITIVE PHYSICAL ATTITUDE | 2 |
| PROLONG LIFESPAN | 2 |
| QUIT/REDUCE COFFEE CONSUMPTION | 9 |
| RECOVER FROM TORN A. TENDON | 1 |
| REDUCE BLOOD LEVELS OF CHOLESTEROL AND TRIGLYCERIDES | 3 |

| ADDED LIFE STYLE GOALS APPEARING THE MOST FREQUENTLY | PRIORITY |
|---|---|
| **HEALTH & FITNESS - (CONT'D)** | |
| REDUCE CAFFEINE | 1 |
| REDUCE CAFFEINE INTAKE | 5.5 |
| REDUCE COFFEE CONSUMPTION | 7 |
| REDUCE COFFEE CONSUMPTION | 2 |
| REDUCE RISK OF DEATH | 1 |
| REDUCE WORRY ABOUT HEART ATTACKS | 2 |
| REDUCE/COPE WITH LOWER BACK PAIN | 4 |
| STAY HALF WAY HEALTHY | 1 |
| STOP BREATHING SECOND HAND SMOKE | 4 |
| WARD OFF OLD AGE | 1 |
| **IMPROVE FAMILY RELATIONSHIPS - 19 OCCURRENCES** | |
| BE AVAILABLE TO FAMILY MEMBERS | 1 |
| CHANGE CAREERS/REDUCE COMMUTING/REDUCE FAMILY SEPARATION | 1 |
| COMMUNICATING MORE WITH FAMILY TO RELIEVE STRESS | 2 |
| DEVELOP ACHIEVE BETTER BALANCE BETWEEN JOB & HOME/FAMILY | 1 |
| DEVOTE MORE TIME TO FAMILY RELATIONS | 1 |
| DOING MORE ACTIVE THINGS WITH FAMILY | 1 |
| IMPROVE MY FAMILY LIFE | 4 |
| IMPROVE MY FAMILY RELATIONSHIPS | 2 |
| IMPROVE MY INTRA-FAMILY RELATIONSHIPS | 2 |
| IMPROVE PERSONAL RELATIONSHIPS (FAMILY,ETC) | 4 |
| INCREASE FAMILY RECREATIONAL ACTIVITIES | 1 |
| PRACTICE A LIFESTYLE WHICH WILL MAKE ME A BETTER HUSBAND & FATHER | 1 |
| PUT MORE EFFORT INTO MAKING MY MARRIAGE SUCCEED | 3 |
| QUALITY OF FAMILY LIFE, MORE TIME WITH FAMILY | 1 |
| SETTLE MY FAMILY IN AN AREA THAT WE LIKE TO LIVE | 2 |
| SPECIAL ATTENTION TO MY FAMILY | 2 |
| SPEND MORE MEANINGFUL TIME WITH FAMILY | 1 |
| SPEND MORE TIME WITH MY FAMILY | 1 |
| SPEND MORE TIME WITH THE FAMILY | 1 |

APPENDIX (M)

| ADDED LIFE STYLE GOALS APPEARING THE MOST FREQUENTLY | PRIORITY |
|---|---|
| **TIME MANAGEMENT - 10 OCCURRENCES** | |
| BETTER PRIORITIZE USE OF OFF-DUTY TIME | 2 |
| BETTER TIME MGT TO PROVIDE REC TIME | 5 |
| FIND TIME FOR RECREATIONAL INTERESTS I ALREADY HAVE | 3 |
| GAIN BETTER CONTROL OF MY OWN TIME | 7 |
| IMPROVE MY EFFICIENCY IN USE OF TIME | 1 |
| INCREASE PRIVATE TIME | 3 |
| MORE TIME FOR PERSONAL PURSUITS | 1 |
| REDUCE HOURS/WEEK INVOLVE IN JOB (STRESS), NOW APPROX 70 HR/WK | 3 |
| TAKE REGULAR LEAVE, TRIPS, ETC | 2 |
| USE MY TIME MORE EFFICIENTLY | 3 |
| **MAKE MORE MONEY - 10 OCCURRENCES** | |
| INCREASE MY DISPOSABLE INCOME | 1 |
| IMPROVE FINANCIAL POSITION | 3 |
| MANAGING FINANCES BETTER TO GAIN "SPENDING MONEY" | 3 |
| MAKE MORE MONEY | 1 |
| INCREASE INCOME SIGNIFICANTLY | 2 |
| GET OUT OF DEBT | 3 |
| MAKE MORE MONEY | 3 |
| IMPROVE POST RETIREMENT INCOME | 3 |
| MAKE MORE MONEY | 2 |
| MAKE MORE MONEY | 1 |
| **RETIREMENT - 10 OCCURRENCES** | |
| CHANNEL MY TECHNICAL & MANAGEMENT EXPERTISE TOWARD POST-RETIRE EMPLOYMENT | 1 |
| DECIDE WHAT TO DO UPON RETIREMENT | 1 |
| FIND POST RETIREMENT EMPLOYMENT | 1 |
| FOCUS ON MOST REALISTIC MIL RETIREMENT ALTERNATIVES | 2 |
| POST MILITARY CAREER SATISFACTION | 5(a) |
| PREPARE FOR A SECOND CAREER | 1 |
| PREPARE FOR RETIREMENT | 1 |
| RETIRE | 1 |
| RETIRE IN COMFORTABLE CIRCUMSTANCES | 2 |

# PERSONAL LIFESTYLE IMPROVEMENT QUESTIONNAIRE

Please read each question carefully and select the most accurate answer possible.

Name _____

Age _____ Male ___ Female ___ S.S. # _____

## PART I
## *Goals For Lifestyle Change*

What are your personal priorities in terms of improving your lifestyle? Some important lifestyle goals are listed below. You may write additional goals in the spaces provided. Please review the list and place the number "1" next to the item which is most important to you, and so on until all items are numbered. (If there are items which clearly do not apply to you, mark "N/A" next to those items.)

___ Lose weight.
___ Improve my cardiovascular fitness.
___ Quit or reduce tobacco use.
___ Reduce my stress and tension level.
___ Reduce my alcohol consumption.
___ Improve my overall muscle tone.
___ Improve my nutrition
___ Develop new recreational interests.
___ Improve my strength and flexibility.
___ Reduce medication usage.
___ _____
___ _____

## PART II
## *Nutrition And Weight Management*

___ A. What kind of milk do you normally use (including milk used in cooking)?
1. Skim milk
2. 1%
3. 2%
4. Whole milk

___ B. How many glasses of milk do you average per day?
1. Normally do not drink milk
2. One glass per day
3. Two glasses per day
4. Three glasses per day
5. Four or more glasses per day

___ C. How many times per week do you eat cheese?
1. Do not eat cheese
2. 2 or less times per week
3. 3-5 times per week
4. 6-8 times per week
5. 9 or more times per week

___ D. How many times per day do you eat butter, margarine or cream?
1. 2 times or less per day
2. 3-5 times per day
3. 6-8 times per day
4. 9 or more times per day

___ E. How many eggs do you eat per week (not including eggs used in cooking)?
1. 2 or less
2. 3-4
3. 5-6
4. 7-8

___ F. How many times per week do you eat beef, pork or lamb?
1. Do not eat beef, pork or lamb
2. Less than once per week
3. 1-2 times per week
4. 3-4 times per week
5. 5-6 times per week
6. 7 or more times per week

___ G. How many times per week do you use regular salad dressing?
1. Use low fat dressings only
2. 2 or less times per week
3. [illegible] times per week
4. 6-8 times per week
5. [illegible] or more times per week

___ H. How many times per week do you eat gravy, or heavy sauces?
1. Do not eat these items
2. Less than once per week
3. 1-2 per week
4. 3-4 per week
5. 5 or more per week

___ I. How many times per week do you eat bacon, sausage, cured ham, hot dogs, lunch meats, or canned meat?
1. Do not eat these items
2. 2 or less
3. 3-5
4. 6-8
5. 9 or more

___ J. How often do you eat fish?
1. 3 or more times per week
2. 2 times per week
3. 1 time per week
4. Do not eat fish

___ K. How often do you eat chicken or turkey?
1. 3 or more times per week
2. 2 times per week
3. 1 time per week
4. Do not eat chicken or turkey

___ L. How often do you eat uncooked vegetables or fruits per week?
1. 14 or more times per week
2. 10-13 times per week
3. 5-9 times per week
4. 1-4 times per week
5. Do not eat uncooked vegetables or fruits

___ M. How often do you eat cooked vegetables or fruits per week?
1. 14 or more times per week
2. 10-13 times
3. 5-9 times per week
4. 1-4 times per week
5. Do not eat cooked vegetables or fruits

___ N. What kind of bread do you usually eat?
1. Whole wheat bread only
2. More whole wheat bread than white bread
3. About the same amount of whole wheat bread as white bread
4. More white bread than whole wheat bread
5. White bread only

___ O. Do you eat breakfast (more than coffee or tea?)
1. Always
2. Usually
3. Occasionally
4. Seldom
5. Never

___ P. How much salt do you add to your food at the table?
1. None
2. A small amount occasionally
3. Usually add some salt
4. Always add salt
5. Usually add salt to food before tasting

___ Q. Place a check mark next to the items you eat more or less regularly.
___ Bacon
___ Bouillon cubes
___ Canned meats
___ Canned soups
___ Corned beef
___ Oriental food with soy sauce
___ Pickles
___ Potato chips, tortilla chips, etc.
___ Pretzels
___ Salted nuts
___ Salted popcorn
___ Smoked meats

___ How many servings of the foods listed above do you eat in an average week?
1. Normally do not eat any of these items.
2. 2 or less
3. 3-5 servings per week
4. 6-8 servings per week
5. 9 or more servings per week

R. Place a check mark next to the items you eat regularly.
___ Brownies
___ Cake
___ Candy
___ Cookies
___ Ice Cream
___ Jam, jellies, marmalades, etc.
___ Jello
___ Kool-aid
___ Lemonade
___ Marshmallows
___ Pastries (doughnuts, sweet rolls, twinkies, etc.)
___ Pie
___ Popsicles
___ Pudding
___ Soft drinks (regular)
___ Sugar coated cereal
___ Sugar on cereal
___ Sugar in coffee, tea or other drinks
___ Sugar on fresh fruits
___ Sweet pickles
___ Whipped cream

___ How many servings of the foods listed above do you eat during an average day?
1. Normally do not eat any of these items
2. Less than one serving per day
3. 1-2 servings per day
4. 3-4 servings per day
5. 5-6 servings per day
6. 7 or more servings per day

___ S. Do you take vitamin and mineral supplements?
1. Daily
2. Usually
3. Occasionally
4. Seldom
5. Never

___ T. In your judgment is your present diet
1. Definitely nutritionally sound
2. Largely nutritionally sound
3. In some ways nutritionally sound
4. Largely nutritionally deficient
5. Definitely not nutritionally sound

___ U. With reference to your body weight goal, do you feel that you are?
1. Below your ideal weight
2. Within 5 pounds of your ideal weight
3. 6 to 10 pounds above your ideal weight
4. 11 to 20 pounds above your ideal weight
5. 21 to 30 pounds above your ideal weight
6. 31 or more pounds above your ideal weight

___ V. When were you last within 5 lbs. of your ideal weight?
1. I am within 5 lbs. of my ideal body weight
2. 1 year ago
3. 2-3 years ago
4. 4-5 years ago
5. More than 6 years ago or do not remember

___ W. In an average week how many meals do you eat out?
1. Less than one per week.
2. 1-2 per week
3. 3-4 per week
4. 5 or more per week

___ X. During the last 5 years how many times have you lost 10 or more pounds and have subsequently regained the weight lost?
1. None
2. 1-2 times
3. 3-4 times
4. 5 or more

___ Y. During the last 5 years how many times have you been on a low calorie diet (1200 calories/per day or less for women or 1500 calories or less for men) for 2 weeks or more?
1. None
2. 1-2 times
3. 3-4 times
4. 5 or more times

___ Z. During the last 5 years how many times have you been on a dietary restriction program without intentional aerobic exercise accompanying diet?
1. None
2. 1-2 times
3. 3-4 times
4. 5 or more times

# PART III
## *Tobacco, Alcohol And Caffeine Consumption*

___ A. What is your current smoking status?
1. Lifetime nonsmoker (includes brief experimentation)
2. Ex-smoker for more than one year
3. Ex-smoker for less than one year
4. Pipe or cigar smoker or chew tobacco
5. Average less than 1 cigarette per day
6. Average 1-9 cigarettes per day
7. Average 10-19 cigarettes per day
8. Average 20-29 cigarettes per day
9. Average 30-39 cigarettes per day
10. Average 40 or more cigarettes per day

___ B. If you are a non-smoker or an ex-smoker please answer this question. How many hours per day do you spend in a tobacco smoking environment? You may indicate more than one answer.

1. None
2. 1-4 hours, low concentration
3. 1-4 hours, high concentration
4. 5-8 hours, low concentration
5. 5-8 hours, high concentration
6. 9 or more, low concentration
7. 9 or more, high concentration

___ C. How many years have you used tobacco? (cigarettes, pipe, cigars, and/or chewing tobacco)
1. Lifetime nonuser (includes brief experimentation)
2. Less than 1 year
3. 1-10 years
4. 11-20 years
5. 21-30 years
6. More than 30 years

___ D. If you are an ex-tobacco user, how many years ago did you quit?
1. Lifetime nonuser (includes brief experimentation)
2. More than 8 years
3. 5-7 years
4. 3-5 years
5. 1-3 years
6. Less than one year
7. I still use tobacco

___ E. How many alcoholic drinks do you average per week? (2 beers or 8 oz. of wine is equal to one jigger or equivalent)
1. Do not drink
2. Less than one per week
3. 1-7 per week
4. 8-15 per week
5. 16-23 per week
6. 24-30 per week
7. More than 30 per week

F. Indicate the number of alcoholic drinks consumed during a typical drinking occasion. (2 beers or 8 oz. of wine is equal to 1 jigger of whiskey or equivalent)
1. Do not drink
2. 1-2 drinks
3. 3-4 drinks
4. 5-6 drinks
5. 7-8 drinks
6. 9 or more drinks

G. How many years have you used alcoholic beverages?
1. Lifetime non-drinker (includes brief experimentation)
2. Up to 4 years
3. 5-10 years
4. 10-15 years
5. 15-20 years
6. More than 20 years

H. How much concern do you have about alcohol consumption?
1. Do not drink
2. Not concerned
3. Very little concern
4. Some concern
5. Considerable concern
6. Extreme concern

I. If an ex-drinker, how many years ago did you quit?
1. Lifetime non-drinker (includes brief experimentation)
2. 5 years or more
3. 3-4 years
4. 1-2 years
5. Less than one year
6. Still use alcohol

J. How many cups of regular coffee or tea do you average per day?
1. Do not drink coffee
2. Less than one cup per day
3. 1-2 cups per day
4. 3-4 cups per day
5. 5-6 cups per day
6. 7 or more cups per day

K. How many caffeine containing soft drinks (colas) do you average per day?
1. Do not drink cola drinks
2. Less than one drink per day
3. 1-2 drinks per day
4. 3-4 drinks per day
5. 5-6 drinks per day
6. 7 or more drinks per day

# PART IV
## *Cardiovascular Disease History*

A. Have any of your blood relatives (parents, grandparents, uncles, aunts, brothers or sisters) had cardiovascular disease? (Stroke, heart attack or bypass surgery)
1. None
2. One or more after age 65
3. One or more between the ages of 51 and 65
4. One or more before age 50

B. Have you ever had a heart attack, a stroke or coronary bypass surgery?
1. Never
2. More than 5 years ago
3. 2-5 years ago
4. 1-2 years ago
5. Within the last year

C. Do you have any type of KNOWN heart trouble (other than a heart attack, a stroke or coronary bypass surgery)?
1. No
2. Yes

D. Do you now or have you ever had a heart murmur?
1. No
2. Yes

E. Have you ever had rheumatic fever?
1. No
2. Yes

F. Have you ever experienced palpitations or rapid beating of your heart when not exercising?
1. No
2. Yes

G. Do you ever experience pain or tightness in the chest while at rest or during normal living activities?
1. No
2. Yes

H. Do you experience chest discomfort during physical exertion, while you are in a cold environment, or during periods of tension or stress?
1. No
2. Yes

I. In the past year, have you had a chest pain while exercising or working which was relieved when you rested?
1. No
2. Yes

J. Have you ever been or are you now on blood pressure medication?
1. No
2. Yes

___ K. Do you recall what your blood pressure was the last time it was checked?
1. No
2. Yes
If yes, what were the numbers ___ ___

___ L. Do you have periods of shortness of breath when not exercising?
1. No
2. Yes

___ M. Have you ever had a resting electrocardiogram?
1. Yes
2. No

___ N. If the answer to the question above is yes, was the EKG
1. Normal
2. Equivocal
3. Abnormal
(If you have not had a resting EKG, answer with a zero)

___ O. Have you ever had an exercise electrocardiogram?
1. No
2. Yes

___ P. If the answer to the previous question is yes, was the EKG
1. Normal
2. Equivocal
3. Abnormal
(If you have not had an exercise EKG, answer with a zero)

## PART V
## *General Health History*

___ A. Are you?
1. A non-diabetic
2. A controlled diabetic
3. An uncontrolled diabetic

___ B. Are any of the members of your immediate family diabetic (father, mother, brothers or sisters)?
1. No
2. Yes

___ C. Would you describe the condition of your lower back as
1. Healthy, no problems
2. Fairly healthy, sometimes stiff
3. Periodically painful, enough to prevent activity
4. Mostly painful, usually limiting activity
5. Very painful, most activity limited due to pain

___ D. Have you had major surgery or a major illness?
1. No major surgery or illness
2. More than 5 years ago
3. 2-5 years ago
4. 1-2 years ago
5. Within the last year

___ E. Are you currently taking medication on the advice of your doctor. If yes, what are you taking?
1. No
2. Yes _____

_____

___ F. Are you allergic to any drugs? If yes, what are they?
1. No
2. Yes _____

_____

___ G. Have you had a common illness (flu, cold, etc.) within the last two weeks?
1. No
2. Yes

___ H. Do you have a serious digestive, stomach or bowel condition?
1. No
2. Yes

___ I. Do you have any chronic respiratory problems (including emphysema, asthma or bronchitis?) If yes explain.
1. No
2. Yes _____

_____

___ J. Do you have problems with your reproductive or urinary system?
1. No
2. Sometimes
3. Yes

___ K. In general, how would you describe the environment in which you have worked and or lived during the last 10 years in terms of pollution?
1. Pollution free: small town or country living, clean work environment, live with nonsmokers, etc
2. Relatively pollution free: small city living, clean work environment, live with nonsmokers, etc
3. Moderately polluted: live in large city and work in a smoke filled office and or live with smokers, etc
4. Very polluted: live in a highly polluted environment such as coal mine, steel mill, etc and live in a large city and live with smokers, etc

___ L. Do you have a physical disability that could interfere with the graded exercise (stress) test or a physical fitness improvement program?
1. No
2. Yes

___ M. In the past year, have you had an unexplained weight loss of more than 10 pounds?
1. No
2. Yes

## PART VI
## *Stress And Tension*

___ A. How do you perceive yourself in terms of stress and tension?
1. Slight or no stress and tension (rarely tense)
2. Moderate stress and tension (sometimes tense)
3. High stress and tension (usually tense)
4. Very high stress and tension (nearly always tense)
5. Extreme stress and tension (always tense)

___ B. Do your normal daily responsibilities
1. Help you to relax
2. Most of the time help you to relax
3. Sometimes help you to relax and sometimes keep you uptight
4. Most of the time keep you uptight
5. Keep you uptight constantly

___ C. Do you use tranquilizers (tension controlling drugs such as Valium, Librium, etc.)?
1. Never
2. Occasionally
3. Frequently
4. Daily

___ D. Do you experience general irritability and/or hyperexcitability and aggression?
1. Rarely or never
2. Occasionally
3. Frequently
4. Always

___ E. Are you predisposed to fatigue or loss of vitality?
1. Rarely or never
2. Occasionally
3. Frequently
4. Always

___ F. Look over the following list of "life events" and circle the point value for each of the events which have occurred within the past year of your life. Add the point values you have circled to obtain your total score.

| Event | Value |
|---|---|
| Death of a spouse | 100 |
| Marital separation | 65 |
| Death of a close family member | 63 |
| Personal injury or illness | 53 |
| Marriage | 50 |
| Loss of job | 47 |
| Marital reconciliation | 45 |
| Retirement | 45 |
| Change in health of a family member | 44 |
| Wife's pregnancy | 40 |
| Sex difficulties | 39 |
| Gain of a new family member | 39 |
| Change in financial status | 38 |
| Death of a close friend | 37 |
| Change to a different kind of work | 36 |
| Increase or decrease of arguments with spouse | 35 |
| Taking out a big mortgage on home | 31 |
| Foreclosure of mortgage or loan | 30 |
| Change in work responsibilities | 30 |
| Son or daughter leaving home | 29 |
| Trouble with in-laws | 29 |
| Wife beginning or stopping work | 29 |
| Outstanding personal achievement | 28 |
| Revision of personal habits | 24 |
| Trouble with business superior | 23 |
| Change in work hours or conditions | 20 |
| Change in residence | 20 |
| Change in schools | 20 |
| Change in recreation | 19 |
| Change in social activities | 18 |
| Taking out a small mortgage on your home | 17 |
| Change in sleeping habits | 16 |
| Change in number of family get-togethers | 15 |
| Change in eating habits | 15 |
| Vacation | 13 |
| Minor violations of law | 11 |

Your total score _____

___ Your total score helps predict the possibility of physical and/or emotional problems within the next two years. Enter your risk level in box on left:
1. Very slight possibility (total score 0 to 150)
2. Mild possibility (total score 151 to 200)
3. Moderate possibility (total score 201 to 250)
4. High possibility (total score 251 to 300)
5. Very high possibility (total score of 301 or more)

___ G. Below are pairs of statements. Each pair has been chosen to represent two kinds of contrasting behavior. Each of us belongs somewhere along the line between the two extremes. Circle the number which indicates in your best judgment where you think your normal behavior places you between the two extremes.

SPECIAL NOTE
Higher scores serve to identify stressors (potential stress and tension causing factors). Your response to the stressor will determine whether it had a positive or negative effect on your stress and tension level. For example you may score yourself a 7 on the first pair, but feel great satisfaction from finishing things once you start them. On the other hand this factor can cause an increase in your tension and stress level if it makes you feel pushed and uptight.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Don't mind leaving things unfinished | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Must get things finished |
| Calm and unhurried about appointments | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Never late for appointments |
| Not competitive | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Highly competitive |
| Listen well, let others finish speaking | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Anticipate others in conversation, (nod, interrupt, finish sentences) |
| Never in a hurry, even when pressured | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Always in a hurry |
| Able to wait calmly | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Uneasy when waiting |
| Easygoing | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Always going full speed ahead |
| Take one thing at a time | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Try to do more than one thing at a time |
| Slow and deliberate in speech | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Vigorous in speech, use a lot of gestures |
| Concerned with satisfying myself, not others | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Want recognition by others for a job well done |
| Slow doing things | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Fast doing things (eating, walking, etc.) |
| Express feelings openly | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Hold feelings in |
| Have a large number of interests | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Have few interests outside |
| Satisfied with my job | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Ambitious, want quick advancement on job |
| Never set my own deadlines | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Often set my own deadlines |
| Feel limited responsibility | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Always feel responsible |
| Never judge things in terms of numbers | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Often judge performance in terms of numbers |
| Casual about my work | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Take work very seriously (work weekends, etc.) |
| Not very precise | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Very precise |

To obtain your total score, add up all the numbers you have circled above. _____

Your total score for this scale will give you an indication of where you stand in terms of Type A/Type B behavior. Some studies have shown a link between type A behavior (characteristics in righthand column) and a tendency for developing cardiovascular problems. On basis of your total score, enter your potential stress and tension level in the box to the left.

1. Very slight — Type B1 (total score of 0 to 29)
2. Mild — Type B2 (total score of 30-59)
3. Moderate — Type AB (total score of 60 to 79)
4. High — Type A2 (total score of 80 to 109)
5. Very high — Type A1 (total score of 110 to 140)

# PART VII
## *Aerobic Exercise And Recreational Activities*

___ A. Look over the following list of aerobic activities and make a check mark beside those in which you normally participate.

___ Alpine skiing
___ Bicycling
___ Canoeing
___ Continuous calisthenics
___ Cross country skiing
___ Hiking
___ Hunting (big game)
___ Hunting (bird & varmint)
___ Ice skating
___ Interval running
___ Jogging in place
___ Jogging or running
___ Mountain climbing
___ Roller skating
___ Rope skipping
___ Rowing
___ Scuba or skin diving
___ Sprint running (interval)
___ Stair climbing
___ Stationary bicycling
___ Swimming
___ Walking
___ Weight training (continuous circuit)

___ The activities listed above contribute to cardiovascular fitness continuously for 15 minutes or more. How often do you participate continuously for 15 minutes or more in one or more of the aerobic activities listed above?

1. 7 or more times per week
2. 5-6 times per week
3. 3-4 times per week
4. 1-2 times per week
5. Less than once per week
6. Do not participate in any of these activities for 15 minutes or more.

___ B. Look over the following list of dance activities and make a check mark beside those in which you normally participate.

- ___ Aerobic dance
- ___ Ballet
- ___ Contemporary (Watusi, hustle, rock, etc.)
- ___ Disco or swing
- ___ Folk dance
- ___ Modern or modern jazz
- ___ Square dance
- ___ Tap or soft shoe
- ___ Traditional ballroom dancing (Waltz, fox trot, bolero, etc.)
- ___ Western dance

___ All of the activities listed above contribute to cardiovascular fitness continuously for 15 minutes or more. How often in an average week do you participate continuously for 15 minutes or more in one or more of the dancing activities listed above?

1. 7 or more times per week
2. 5-6 times per week
3. 3-4 times per week
4. 1-2 times per week
5. Less than once a week
6. Do not participate in any of these dance activities continuously for 15 minutes or more.

___ C. Look over the following list of aerobic sports and make a check mark beside those in which you normally participate.

- ___ Badminton
- ___ Basketball
- ___ Boxing
- ___ Deck Tennis
- ___ Fencing
- ___ Field Hockey
- ___ Golf (walking)
- ___ Handball
- ___ Ice Hockey
- ___ Judo
- ___ Karate
- ___ Racquet ball
- ___ Soccer
- ___ Squash
- ___ Tennis
- ___ Volleyball
- ___ Water Polo
- ___ Water skiing

___ All of the activities listed above contribute to cardiovascular fitness continuously for 15 minutes or more. How often in an average week do you participate continuously for 15 minutes or more of the aerobic sports listed above?

1. 7 or more
2. 5-6 times per week
3. 3-4 times per week
4. 1-2 times per week
5. Less than once a week
6. Do not participate in any of these sports continuously for 15 minutes or more.

___ D. When you participate in one of the aerobic activities listed in A, B or C, would you judge your exercise intensity to be:

1. Extremely high — cannot carry on a conversation
2. High — equal to fast jogging
3. Moderate — equal to slow jogging
4. Low — equal to fast walking
5. Very low — equal to slow walking

___ E. When you participate in one of the aerobic activities in A, B or C, what is your average duration?

1. More than 60 minutes
2. 45 to 60 minutes
3. 30 to 45 minutes
4. 15 to 30 minutes
5. Less than 15 minutes

___ F. How do you feel about aerobic exercise?

1. Experience extreme pleasure (natural high)
2. Enjoy participating
3. Take it or leave it
4. Dislike participation
5. Intensely dislike participation

___ G. How much physical effort does your job require? Estimate your normal daily vocational activity level based on the following?

1. Heavy manual labor: more or less continuous perspiration from activities such as heavy labor, moving heavy objects by hand, etc.
2. Manual labor: intermittent perspiration from activities such as light construction, carpentry plumbing, normal warehouse labor, machinery operation, etc.
3. Moderate activity: little or no perspiration, continuous standing and/or walking with some light lifting, such as heavy house and/or moderate industrial work, gardening, and home or equipment maintenance, etc.
4. Semi-sedentary: standing, walking short distances and some sitting, such as light housework, light assembly work, etc.
5. Sedentary: work at a desk with a minimum of movement, such as secretary, receptionist, office work, etc.

___ Look over the following list of non-aerobic recreational activities and make a check mark beside those in which you normally participate.

- ___ Archery
- ___ Baseball
- ___ Bird watching
- ___ Bowling
- ___ Calisthenics (non-continuous)
- ___ Cricket
- ___ Diving
- ___ Fishing (all types)
- ___ Football
- ___ Gardening
- ___ Gymnastics
- ___ Hang gliding
- ___ Horseback riding
- ___ Ice boating
- ___ Motorcycling
- ___ River running
- ___ Sailing
- ___ Ski jumping
- ___ Sky diving
- ___ Sledding & tobogganing
- ___ Snowmobiling
- ___ Softball
- ___ Sprint running (non-interval)
- ___ Table tennis
- ___ Volleyball
- ___ Weight training (non circuit)
- ___ Yoga
- ___ Other

___ How often in an average week do you participate in one or more of the recreational activities listed above?

1. 7 or more times per week
2. 5-6 times per week
3. 3-4 times per week
4. 1-2 times per week
5. Less than once a week
6. Never

# CARDIOVASCULAR RISK FACTOR REPORT

DATE:_____

CODE NO._____

AGE:_____
(enter in item 7 also)

SEX:_____

NAME_____
( optional )

WEIGHT_____

HEIGHT_____

RESTING HEART RATE (PULSE)_____

| RISK FACTORS | TEST RESULTS | RISK CATEGORY | | | | | RISK POINTS |
|---|---|---|---|---|---|---|---|
| | | VERY LOW | LOW | MOD-ERATE | HIGH | VERY HIGH | |
| 1. TOTAL CHOLESTEROL | | | | | | | |
| 2. CHOLESTEROL RATIO(HDL) | | | | | | | |
| 3. TRIGLYCERIDES | | | | | | | |
| 4. GLUCOSE/DIABETES | | | | | | | |
| 5. SYSTOLIC BLOOD PRESSURE | | | | | | | |
| 6. DIASTOLIC BLOOD PRESSURE | | | | | | | |
| 7. BODY FAT | | | | | | | |
| 8. AGE | | | | | | | |
| 9. FAMILY HISTORY | | | | | | | |
| 10. PERSONAL HISTORY | | | | | | | |
| 11. CARDIOVASCULAR FITNESS | | | | | | | |
| 12. SMOKING | | | | | | | |
| 13. STRESS | | | | | | | |
| TOTAL RISK . . . . . | | | | | | | |

REMARKS:

Adapted from U.S. Sports Academy

Air War College

APPENDIX TO

# EXECUTIVE HEALTH ASSESSMENT

AND

# FITNESS PROGRAM

AY 84-85

## CARDIOVASCULAR RISK FACTOR

## DEFINITIONS AND EXPLANATIONS

AIR WAR COLLEGE
Air University
United States Air Force
Maxwell Air Force Base, Alabama

AIR WAR COLLEGE

AIR UNIVERSITY

APPENDIX TO

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AND

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AY 84-85

# CARDIOVASCULAR RISK FACTOR

# DEFINITIONS AND EXPLANATIONS

Prepared by

Lieutenant Colonel Robert F. Fowler
Department of Leadership and Management

Chaplain, Lieutenant Colonel, George H. Updegrove
Department of Leadership and Management

and

Lieutenant Colonel L. Jay McIntyre
Nebraska Air National Guard Medical Corps

THIS BOOK IS TO BE USED WITH THE
"CARDIOVASCULAR RISK FACTOR REPORT"

Maxwell Air Force Base, Alabama

July 1984

CARDIOVASCULAR RISK FACTOR

DEFINITIONS AND EXPLANATIONS

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AIR WAR COLLEGE
DEPARTMENT OF LEADERSHIP AND MANAGEMENT

# EXECUTIVE HEALTH ASSESSMENT AND FITNESS PROGRAM AY 84-85

## PART I

## CARDIOVASCULAR RISK FACTOR DEFINITIONS AND EXPLANATIONS

### INTRODUCTION

Good health depends on a combination of factors: the environment in which you work and live, the personal traits you have inherited, the care you receive from doctors, and the personal habits that you perform daily, usually without much thought. All of these work together to affect your health. Many of us rely too much on doctors to keep us healthy, and we often fail to see the importance of actions we can take ourselves.

There are risks that you can't do much about. There is little you can do about natural aging. And you can't pick your parents. There are, however, risks that you can control. You can quit smoking. You can lose weight. You can improve the heart's efficiency. You can lower the cholesterol in your blood. You can take control of your lifestyle and make a choice for a healthier life--and a longer one.

Your "Cardiovascular Risk Factor Report" contains the information you need. Results from your blood test reflect current cardiovascular condition. Results of your "Personal Lifestyle Improvement Questionnaire" allow an estimate of vulnerability to future heart disease. As you review your results, note it is your lifestyle that caused your current condition.

We hope you will be motivated to take steps to eliminate or minimize the risks you identify.

### EXPLANATION OF REPORT FORMAT

Your "Cardiovascular Risk Factor Report" is not a diagnosis. It's purpose is simply to tell you how vulnerable you are to cardiovascular disease. The report was completed by the United States Sports Academy, Preventive Medicine Center, using your blood analysis results and your responses to the "Personal Lifestyle Improvement Questionnaire."

Your report lists RISK FACTORS with corresponding TEST RESULTS, RISK CATEGORY and RISK POINTS:

RISK FACTORS are factors determined by the American Heart Association that may assist in the prediction of coronary heart disease. The more powerful predictors are termed MAJOR and the less powerful are termed MINOR.

TEST RESULTS are your values that were used to estimate RISK CATEGORY and RISK POINTS. Expected ranges are provided in this book to aid in interpretation. "Expected Ranges" are the normal parameter for 95 percent of the population at large. If a TEST RESULT value is slightly outside the "Expected Range," there is probably little cause for concern. If a value is far beyond the expected, have the test repeated to verify that the result was not a temporary abnormality.

If the retest value remains abnormal, you should definitely consider a visit to a physician for more extensive evaluation.

RISK CATEGORY is an estimate of your vulnerability to cardiovascular disease brought about by the corresponding RISK FACTOR.

RISK POINTS. Coronary RISK POINTS are used to weight individual TEST RESULTS. They provide a reference scale for comparison and for combining the values of all RISK FACTORS. The added values of all RISK POINTS produces a TOTAL RISK value to estimate your overall susceptibility to heart disease.

| If your TOTAL RISK POINTS are: | Your risk of developing cardiovascular disease is: |
|---|---|
| 0-4.9 points | Very low |
| 5.0-12.9 points | Low |
| 13.0-21.9 points | Moderate |
| 22-30.9 points | High |
| 31 or more points | Very high |

We would like to point out that a "very low" risk factor score is not a guarantee that you will never develop cardiovascular disease or have a heart attack. Neither is a "very high" risk factor score a guarantee that you will have a heart attack. These categories are based on statistical evidence compiled by the United States Sports Academy. If you are "very low" risk, it means that fewer people with your characteristics develop coronary heart disease than is true of people with other characteristics.

When a high fitness, low coronary heart disease risk person

such as a marathon runner has a heart attack, it is "news" and the media picks it up. People have a tendency to think that reducing their risk is not so important if one of these super fit people has a heart attack. While one of these rare incidents occurs, many thousand high risk, low fitness people have heart attacks. It is important to realize that only you can control your cardiovascular disease risk, and the lower you can get it, the better your chances are of living a longer and more productive life.

Each RISK FACTOR is defined on the following pages.

## 1. TOTAL CHOLESTEROL

(MAJOR RISK FACTOR) Cholesterol is a principal fat in the bloodstream. Its two main components are HDL (high density lipoprotein) and LDL (low density lipoprotein). LDL carries and deposits fat on the arteries of the heart. HDL removes fat from the arteries. While cholesterol is essential for proper development and functioning of body tissues, excessive levels may promote coronary artery disease. Deposits of cholesterol can collect in the arteries, cutting down the flow of blood to your heart. For this reason, high blood cholesterol is considered a major risk factor.

Expected Range: 146-277 mg/dl (RISK POINTS: See Cholesterol Ratio

The American Medical Association Council on Scientific Affairs has recommended that people with blood cholesterol levels in the top half (50th percentile) of the population could benefit from cholesterol reduction and that people whose levels are in the top tenth (90th percentile) deserve vigorous dietary therapy.

### MEDIAN CHOLESTEROL LEVELS

| | MEN Cholesterol Level (mg/dl) | | WOMEN Cholesterol Level (mg/dl) | |
|---|---|---|---|---|
| AGE | 50th | 90th | 50th | 90th |
| 30-39 | 194 | 234 | 176 | 219 |
| 40-49 | 206 | 254 | 195 | 241 |
| 50-59 | 211 | 261 | 222 | 275 |

Source: Lipid Research Clinics data, Journal of the American Medical Association 250:14, October 14, 1983.

Diet is the major key to reducing cholesterol and controlling atherosclerosis. If you would like to decrease your TOTAL CHOLESTEROL and do not desire an individual prescription from a physician, the American Heart Association recommends the following diet guidelines:

### A FAT-CONTROLLED, LOW CHOLESTEROL DIET

Everyday, select foods from each of the basic food groups in lists 1-5, and follow the recommendations for number and size of servings.

LIST 1: Meat, poultry, fish, dried beans and peas, nuts, eggs

One serving is 3-4 ounces of cooked meat or fish (not including bone or fat) or 3-4 ounces of a vegetable listed. Use two or more servings (a total of 6-8 ounces) daily.

| RECOMMENDED | AVOID OR USE SPARINGLY |
|---|---|
| Chicken, turkey, veal, fish, in most of your meat meals for the week. | Duck, goose |
| Shellfish: clams, crab, lobster, oysters, scallops. | Shrimp is moderately high in cholesterol. Use a 4-ounce serving in a meat meal no more than once a week. |
| Use a 4-ounce serving as a substitute for meat. | Heavily marbled and fatty meats, spare ribs, mutton, frankfurters, sausages, fatty hamburgers, bacon, luncheon meats. |
| Beef, lamb, pork, ham, less frequently. | Organ meats: liver, kidney, heart, sweetbreads, are very high in cholesterol. Since liver is very rich in vitamins and iron, it should not be eliminated from the diet completely. Use a 4-ounce serving in a meat meal no more than once a week. |
| Choose lean ground meat and lean cuts of meat; trim all visible fat before cooking; bake, broil, roast, or stew so that you can discard the fat which cooks out of the meat. | Egg yolks: limit to 3 per week including eggs used in cooking. |
| Nuts and dried beans and peas: | Cakes, batters, sauces, and other foods containing egg yolks. |
| Kidney beans, lima beans, baked beans, lentils, chick peas (garbanzos), split peas, are high in vegetable protein and may be used in place of meat occasionally. | |
| Egg whites as desired. | |

LIST 2: Vegetables and Fruit (Fresh, frozen, or canned)

One serving is one-half cup. Use at least four servings daily.

| RECOMMENDED | AVOID OR USE SPARINGLY |
|---|---|
| One serving should be a source of Vitamin C: | |
| Broccoli, cabbage (raw), tomatoes. Berries, cantaloupe, grapefruit (or juice), mango, melon, orange (or juice), papaya, strawberries, | |

tangerines.

One serving should be a source of Vitamin A--dark green leafy or yellow vegetables, or yellow fruits:

Broccoli, carrots, chard, chicory, escarole, greens (beet, collard, dandelion, mustard, turnip), kale, peas, rutabagas, spinach, string beans, sweet potatoes and yams, watercress, winter squash, yellow corn,

Apricots, cantaloupe, mango, papaya.

Other vegetables and fruits are also very nutritious; they should be eaten in salads, main dishes, snacks, and desserts, in addition to the recommended daily allowances of high vitamin A and C vegetables and fruits.

If you must limit your calories, use vegetables such as potatoes, corn, or lima beans sparingly. To add variety to your diet, one serving (½ cup) of any one of these may be substituted for one serving of bread or cereals.

LIST 3: Bread and Cereals (Whole grain, enriched, or restored)

One serving of bread is one slice. One serving of cereal is one-half cup cooked or one cup cold with skimmed milk. Use at least four servings daily.

| RECOMMENDED | AVOID OR USE SPARINGLY |
|---|---|
| Breads made with a minimum of saturated fat: | Butter rolls, commercial biscuits, muffins, donuts, sweet rolls, cakes, crackers, egg bread, cheese bread, commercial mixes containing dried eggs and whole milk. |
| White enriched (including raisin bread), whole wheat, English muffins, French bread, Italian bread, oatmeal bread, pumpernickel, rye bread. | |
| Biscuits, muffins, and griddle cakes made a home, using an allowed liquid oil as shortening. | |
| Cereal (hot and cold), rice, melba toast, matzo, pretzels. | |

Pasta: macaroni, noodles (except egg noodles), spaghetti.

LIST 4: Milk Products

One serving is eight ounces (one cup)

Buy only skimmed milk that has been fortified with Vitamins A and D.

Daily servings: Children up to 12 - 3 or more cups
Teenagers - 4 or more cups
Adults - 2 or more cups

| RECOMMENDED | AVOID OR USE SPARINGLY |
|---|---|
| Milk products that are low in dairy fats: | Chocolate milk, canned whole milk, ice cream, all creams including sour, half and half, whipped, whole milk yogurt. |
| Fortified skimmed (non-fat) milk and fortified skimmed milk powder, low-fat milk. The label on the container should show that the milk is fortified with Vitamins A and D. The word "fortified" alone is not enough. | Non-dairy cream substitutes (usually contain coconut oil which is very high in saturated fat). |
| Buttermilk made from skimmed milk, yogurt made from skimmed milk, canned evaporated skimmed milk, cocoa made with low-fat milk. | Cheeses made from cream or whole milk. |
| Cheeses made from skimmed or partially skimmed milk, such as cottage cheese, creamed or uncreamed (uncreamed, preferably) farmer's, baker's, or hoop cheese, mozarello and sapsago cheeses. Processed modified fat cheeses (skimmed milk and polyunsaturated fat). | Butter |

LIST 5: Fats and Oils (Polyunsaturated)

An individual allowance should include about two to four tablespoons daily (depending on how many calories you can afford) in the form of margarine, salad dressing, and shortening.

| RECOMMENDED | AVOID OR USE SPARINGLY |
|---|---|
| Margarines, liquid oil shortenings, salad dressings and mayonnaise containing any of these polyunsaturated vegetable oils: | Solid fats and shortenings: |
| Corn oil, cottonseed oil, safflower oil, sesame seed oil, soybean oil, sunflower seed oil. | Butter, lard, salt pork fat, meat fat, completely hydrogenated margarines and vegetable shortenings, products containing coconut oil. |
| Margarines and other products high in polyunsaturates can usually be identified by their label which lists a recommended liquid vegetable oil as the first ingredient, and one or more partially hydrogenated vegetable oils as additional ingredients. | Peanut oil and olive oil may be used occasionally for flavor, but they are low in polyunsaturates and do not take the place of the recommended oils. |
| Diet margarines are low in calories because they are low in fat. Therefore it takes twice as much diet margarine to supply the polyunsaturates contained in a recommended margarine. | |

LIST 6: Deserts, Beverages, Snacks, Condiments

The foods on this list are acceptable because they are low in saturated fat and cholesterol. If you have eaten your daily allowance from the first five lists, however, these foods will be in excess of your nutritional needs, and many of them also may exceed your calorie limits for maintaining a desirable weight.

| ACCEPTABLE | AVOID OR USE SPARINGLY |
|---|---|
| Low in calories or no calories: | Coconut and coconut oil, commercial cakes, pies, cookies, and mixes, frozen cream pies, commercially fried foods such as potato chips and other deep fried snacks, whole milk puddings, chocolate pudding (high in cocoa butter and therefore high in saturated fat), ice cream. |
| Fresh fruit and fruit canned without sugar, tea, coffee (no cream), cocoa powder, water ices, gelatin, fruit whip, puddings made with non-fat milk, low calorie drinks, vinegar, mustard, ketchup, herbs, spices. | |

High in calories:

Frozen or canned fruit with sugar added, jelly, jam, marmalade, honey, pure sugar candy such as gum drops, hard candy, mint patties (not chocolate), imitation ice cream made with safflower oil, cakes, pies, cookies, and puddings made with polyunsaturated fat in place of solid shortening, angel food cake, nuts, especially walnuts, peanut butter, bottled drinks, fruit drinks, ice milk, sherbet, wine, beer, whiskey.

Source: American Heart Association, The Way to A Man's Heart. American Heart Association, Dallas, 1983.

For more information on cholesterol, read Dr. Kenneth Cooper's The Aerobics Program for Total Well-Being (Issued separately) and Time magazines "Hold the Eggs and Butter" reprinted in your Executive Health Assessment and Fitness Program Instruction Circular.

## 2. CHOLESTEROL RATIO

(MAJOR RISK FACTOR) The cholesterol ratio is considered the single most important factor in predicting your susceptibility to heart attacks, and in determining well-being, both now and in the future. The ratio is derived by comparing the amount of total cholesterol to the amount of good cholesterol, HDL. The clinical fact is high HDL levels reduce risk of heart disease. The USAF School of Aerospace Medicine has validated the protective effect of HDL in studies of both asymptomatic (no overt signs of disease) and symptomatic (confirmed disease) control groups. The test is becoming part of the Air Force physical, although not all USAF hospitals currently possess the equipment to break out HDL.

Expected Range is explained below:

The ratio for males should always be less than 5.0, and preferably less than 4.5. For women, the ratio should be lower, always under 4.0 and preferably under 3.5. (Ref: The Aerobics Program for Total Well-Being, by Dr. Kenneth H. Cooper).

RISK CATEGORY AND RISK POINTS:

MALE

| Risk Category: | Very Low | Low | Moderate | High | Very High |
|---|---|---|---|---|---|
| Ratio: | <4.5 | 4.6-5.5 | 5.6-6.5 | 6.6-7.5 | 7.6-9.5> |
| Risk Points: | 0.0 | 0.2-2.0 | 2.2-4.0 | 4.2-6.0 | 6.2-10.0 |

FEMALE

| Risk Category: | Very Low | Low | Moderate | High | Very High |
|---|---|---|---|---|---|
| Ratio: | <3.5 | 3.6-4.5 | 4.6-5.5 | 5.6-6.5 | 6.6-8.5> |
| Risk Points: | 0.0 | 0.2-2.0 | 2.2-4.0 | 4.2-6.0 | 6.2-10.0 |

If your ratio is "very low" or "low", the chances of hardening of the arteries are minimum. However, if the ratio is "moderate" or higher, then some form of coronary disease is probable.

If you would like to improve your cholesterol ratio and do not desire consultation with a physician, a good starting point is to evaluate your diet and exercise habits.

a. For diet, the general rule is to limit total fat intake to not more than 30% of total calories. The fat controlled, low cholesterol diet, included in the Total Cholesterol section, is an excellent reference.

b. Exercise is another means of lowering the ratio. A program that will burn 1500 to 2000 calories per week is required. The "USAF Fitness Improvement Training" program is recommended as a starting program.

For more information on cholesterol ratio, see The Aerobics Program for Total Well-Being, Chapter 4, by Dr. Kenneth H. Cooper. Additional readings are available in EDRL.

## 3. TRIGLYCERIDES

(MINOR RISK FACTOR) Triglycerides are a class of blood fat. Studies have shown that triglycerides are associated with development of coronary artery disease when present in excessive amounts with a total cholesterol of 250 or greater, or a cholesterol ratio of 5.7 or greater. Other studies have concluded that since large amounts of triglycerides are not found in the atherosclerosis patient's blood vessel tissue, high triglycerides are a questionable risk factor. The triglyceride debate is unresolved, however, it is appropriate to consider as a possible factor at this time.

Expected range: 35-219 mg/dl

RISK CATEGORY and RISK POINTS: (Male and female--all ages)

| Risk Category | Very Low | Low | Moderate | High | Very High |
|---|---|---|---|---|---|
| Triglycerides | < 100 | 101-141 | 142-181 | 182-221 | 222-260 > |
| Risk Points | 0.0 | 0.1-0.5 | 0.6-1.0 | 1.1-1.5 | 1.6-2.0 |

Triglyceride levels may be lowered by proper diet and exercise. Smoking increases triglycerides. For diet, reduce refined sugar intake (soft drinks, candy, honey, desserts, etc.).

## 4. GLUCOSE

(MINOR RISK FACTOR) Blood glucose is a blood sugar. Significantly high or low values may indicate serious disorder. Elevated blood sugar is most commonly found in diabetes, while severe hypoglycemia (abnormally low level) typically appears in other disorders of the pancreas organ. The damage to blood vessels may increase the chance of a heart attack.

Expected Range: 62 to 128. Any level above 150 or below 50 should prompt immediate follow-up testing and evaluation by a physician. Inadequate fasting may elevate level to 140.

RISK CATEGORY and RISK POINTS: (Males and Female--all ages)

| Risk Category | Very Low | Low | Moderate | High | Very High |
|---|---|---|---|---|---|
| Glucose | 120 | 121-128 | 129-136 | 137-144 | 145-150 |
| Risk Points | 0.0 | 0.1-0.8 | 0.9-1.6 | 1.7-2.4 | 2.5-3.0 |

### FOODS TO AVOID BORDERLINE ELEVATED BLOOD GLUCOSE

First and foremost, if you're overweight - lose weight!! In many instances, just losing excess body fat may control all diabetic symptoms. The reason is that excess body fat prevents insulin from working properly.

If you are not overweight and are only concerned with restricting foods that may elevate your blood glucose, avoid the following:

MILK PRODUCTS:

Chocolate Milk
Sweetened, condensed milk
Eggnog
Milk shakes

FRUITS:

Sweetened fruit and fruit juices
Fruit-ades
Fruit drinks
Nectars
Punch

VEGETABLES: Any cooked in butter, cream sauces, or fried

BREAD/STARCHES:

Cheese or egg bread
Butter rolls
Sugar coated cereal
Cereals containing coconut or fat
Sweetened "natural" cereal
Candied sweet potato
Cakes, cookies, doughnuts, pastries, pies, sweet rolls

As you can see, sugar is the key. Any other foods are considered acceptable as long as moderation is practiced.

For additional information on blood glucose, read Executive Health, pages 188-190.

## 5. SYSTOLIC BLOOD PRESSURE

## 6. DIASTOLIC BLOOD PRESSURE

(MAJOR RISK FACTOR) High blood pressure--either the upper (systolic) or lower (diastolic) figure is directly related to heart trouble. Even mild elevations can double the risk of heart attack. High blood pressure increases the work load of the heart through thickening of the heart muscle. The result is a less efficient heart working harder to pump less blood. Another way in which high blood pressure may cause subsequent coronary heart disease is by damaging the arteries, allowing for increased deposits of cholesterol.

Expected Range: As a rule of thumb, if your blood pressure is approaching 140/90, you are borderline hypertensive. (Hypertension is high blood pressure.)

RISK CATEGORY and RISK POINTS: (Male and Female--all ages)

| Category: | Very Low | Low | Moderate | High | Very High |
|---|---|---|---|---|---|
| Systolic Pressure: | 124 | 125-134 | 135-144 | 145-154 | 154-164 |
| Risk Points: | 0.0 | 0.1-1.0 | 1.1-2.0 | 2.1-3.0 | 3.1-4.0 |
| Diastolic Pressure: | 80 | 81-88 | 89-96 | 97-104 | 105-112 |

If your blood pressure is in the "moderate" or above category, read on.

Blood pressure can often be reduced through a decrease in salt intake, diet with subsequent weight and cholesterol reduction, exercise, smoking cessation, and relaxation techniques. If these measures are not effective, medical treatment is needed.

There is always a positive correlation of body mass and blood pressure. Weight gain in early life is an important risk factor for the development of hypertension. A calorie-balanced diet with emphasis on cholesterol and salt reduction is recommended.

A reduction in salt intake is recommended for all Americans, especially those who are borderline hypertensives. The national goal is for all Americans to decrease their daily salt consumption from 6-18 gms (3-8 tsps) to 5 gms (2½ tsps). A .2 gm sodium intake (1 tsp per day) is recommended for borderline or diagnosed hypertensives. This entails careful reading of labels for sodium content, choosing alternatives to processed foods, adding little or no salt to

cooking and none while at the table, increasing the use of herbs and spices, using salt substitutes while weaning off of added salt, and calling ahead to restaurants to ensure special consideration to dietary modifications. Negligible amounts of salt are found in fruits and vegetables. Remember, excessive salt intake while on prescribed diuretics (blood-pressure reducing medications) may negate or reduce the effects of the medication.

Individuals who are borderline or diagnosed hypertensives are cautioned to be aware of extreme straining while lifting weight, i.e., don't use weights that you can lift only 1-7 times per set.

Stress reduction (appropriate ventilation/relaxation techniques incorporating deep breathing and taking one's time throughout the day's tasks) are noted to help prevent/control hypertension.

Smoking has been shown to increase blood pressure. Detailed information on cessation is provided in handouts included with this packet.

Finally, heredity is an important consideration for the hypertensive individual. It is urged that the blood pressure of family members be checked on a regular basis.

For additional information, read Executive Health, pages 51-52, 90-91 and 191.

## 7. BODY FAT

(MINOR RISK FACTOR) Too much body fat is responsible for some heart trouble (as well as low energy levels, emotional problems related to poor self-image, and certain other life-threatening physical ailments). Its influence is significantly increased in combination with other risk factors such as hypertension or diabetes. Dr. Kenneth Cooper, in his book The Aerobics Program for Total Well-Being, cites the following:

- Fat accumulations primarily above the waist can be correlated with increased risk of developing diabetes.
- Men who are 40 percent or more above their ideal weight show an increase in cancer of the colon, rectum, and prostate. In women, there is increased risk of cancer of the uterus, ovaries, gall bladder, and breast.
- High blood pressure--either systolic or diastolic figure--will improve following weight loss.
- Obesity is among the major coronary risk factors listed by the American Heart Association.
- Men of medium bone structure should maintain roughly 15 to 19 percent body fat. (15 percent is the maximum athletic body fat weight. In no case should a man's body fat exceed 19 percent.)
- Women of average build should maintain roughly 18 to 22 percent body fat. (18 percent is the maximum athletic body fat weight. In no case should a woman's body fat exceed 22 percent.)

Obesity contributes still another hazard. It acts to produce abnormal fats in the bloodstream, which cause changes leading to atherosclerosis.

NOTE: Your body fat value was determined by formula. While this is not the most accurate procedure, it is sufficient to estimate a RISK CATEGORY and RISK POINTS.

RISK CATEGORY and RISK POINTS:

(See next page)

| Category | Very Low | Low | Moderate | High | Very High |
|---|---|---|---|---|---|
| Age | Fat % | Fat % | Fat % | Fat % | Fat % |
| 29 | 15 | 15.5-20 | 20.5-25 | 25.5-30 | 30.5-35 |
| 30-39 | 16 | 16.5-21 | 21.5-26 | 26.5-31 | 31.5-36 |
| 40-49 | 17 | 17.5-22 | 22.5-27 | 27.5-32 | 32.5-37 |
| 50 | 18 | 18.5-23 | 23.5-28 | 28.5-33 | 33.5-38 |
| Risk Points | 0.0 | 0.1-1.0 | 1.1-2.0 | 2.1-3.0 | 3.1-4.0 |

**FEMALE**

| Category | Very Low | Low | Moderate | High | Very High |
|---|---|---|---|---|---|
| Age | Fat % | Fat % | Fat % | Fat % | Fat % |
| 29 | 19 | 19.5-24 | 24.5-29 | 29.5-34 | 34.5-39 |
| 30-39 | 20 | 20.5-25 | 25.5-30 | 30.5-35 | 35.5-40 |
| 40-49 | 21 | 21.5-26 | 26.5-31 | 31.5-36 | 36.5-41 |
| 50 | 22 | 22.5-27 | 27.5-32 | 32.5-37 | 37.5-42 |
| Risk Points | 0.0 | 0.1-1.0 | 1.1-2.0 | 2.1-3.0 | 3.1-4.0 |

8. AGE FACTOR

9. FAMILY HISTORY

10. PERSONAL HISTORY

Age is a MAJOR RISK FACTOR. Family History of Cardiovascular disease is a MINOR RISK FACTOR. These two risk factors cannot be controlled.

- Incidence of coronary disease in a first degree relative under age 65 can, in itself, be a significant risk factor.

- Being a male and advancing age are important risk factors. The death rate in the U.S. for males age 25 to 34 is 7.1 per 100,000. It increases to 779.2 per 100,000 in the age range 55 to 64.

- Forty is the most common age for heart attacks among USAF personnel. Studies have shown that Air Force members between the ages of 32 and 42 years of age are increasingly vulnerable to cardiovascular disease, and the incidence of heart attacks goes up dramatically during these years.

RISK POINTS:

AGE

If you are over twenty years old, you will notice that points have been added to your risk factor score on the basis of your age. Points are allocated as follows:

| | |
|---|---|
| 20 to 29 years | 0 to .9 points |
| 30 to 39 years | 1 to 1.9 points |
| 40 to 49 years | 2 to 2.9 points |
| 50 to 59 years | 3 to 3.9 points |
| 60 years or older | 4 points |

While there is nothing you can do to change your age, you can reduce your total risk factor score substantially by focusing on other risk factors.

FAMILY HISTORY OF HEART ATTACK

| | |
|---|---|
| None and over 65 years | 0 |
| 51-65 years | 2 |
| 50 and under | 4 |

PERSONAL HISTORY OF HEART ATTACK

| | |
|---|---|
| Never had a heart attack or stroke | 0 |
| More than 5 years ago | 2 |
| 2-5 years ago | 3 |
| 1-2 years ago | 5 |
| During the last year | 8 |

## II. CARDIOVASCULAR FITNESS (PHYSICAL INACTIVITY)

(MAJOR RISK FACTOR) The lack of physical exercise affects several other factors involved in the prediction of coronary heart disease, e.g., physical inactivity may lead to obesity as well as adverse changes in serum (blood) cholesterol levels.

Cardiovascular fitness is the body's ability to absorb, transport, and use oxygen. It also represents the efficiency at which the heart, respiratory and circulatory systems work together and their functional capacity. Cardiovascular fitness tests (measured by performing a treadmill or other test) can produce a direct measurement of fitness in terms of oxygen utilization. Your Cardiovascular Fitness value is an estimate based upon your responses in the "Personal Lifestyle Improvement Questionnaire."

Exercise is the treatment. It strengthens the heart muscle, stimulates circulation, helps to avoid overweight and tones the muscles for better appearance. There is evidence that the survival rate of heart attack victims is higher in those who have exercised regularly.

For more information on the relationship of exercise and heart disease, read The Aerobics Program for Total Well-Being, Part III; Executive Health, pages 132-135; and "The Role of Exercise" in this book.

RISK CATEGORY and RISK POINTS:

Points are estimated from your responses to the "Personal Lifestyle Improvement Questionnaire," Part VII.

## 12. SMOKING

(MAJOR RISK FACTOR. A report by the Surgeon General of the U.S. Public Health Service stated that in 1982, we could expect approximately 400,00 deaths in some way related to the use of tobacco--through lung cancer, bronchitis, emphysema, and heart disease. In a separate study, 75 percent of the heart attacks suffered by otherwise healthy women under the age of 50 were shown to be related to cigarette smoking. The risk can be rapidly reduced by discontinuing smoking. Data has shown that stopping before age 65 can result in 50 percent risk reduction within two years.

If you smoke, read on.

RISK POINTS:

| | |
|---|---|
| Lifetime non-smokers | 0 |
| Ex-smokers (1 year minimum) | 0 |
| Ex-smokers (less than one year) | 1 |
| Pipe or cigar smokers | 2 |
| Less than 1 cigarette per day | 2 |
| 1-9 cigarettes per day | 4 |
| 10-19 cigarettes per day | 5 |
| 20-29 cigarettes per day | 6 |
| 30-39 cigarettes per day | 7 |
| 40 or more cigarettes per day | 8 |

### PHYSICAL ADDICTION AND SMOKING

SMOKING IS THE NUMBER ONE RISK FACTOR -- nothing else you do will be effective if you cannot stop smoking. CORONARY ARTERY DISEASE is the single most important cause of mortality in smokers, an even greater risk than cancer.

### PHYSIOLOGICAL EFFECTS OF NICOTINE ADDICTION

THE ADDICTIVE AGENT IN CIGARETTES IS NICOTINE (approx. 2 mg per cigarette)

APPROXIMATELY 75-80% OF CIGARETTE SMOKERS ARE ADDICTED

NICOTINE EFFECTS ON THE BRAIN ARE DOSE-DEPENDENT RANGING FROM STIMULANT TO TRANQUILIZER

NICOTINE DEPENDENT SMOKERS NEED A BRAIN LEVEL BOOST EVERY 20 TO 30 MINUTES

A SLOWER NICOTINE EFFECT IS OBTAINED WITHOUT INHALATION FROM CIGARS AND CHEWING TOBACCO

PHYSICAL WITHDRAWAL SYMPTOMS LAST APPROXIMATELY 7-10 DAYS IF ACCOMPANIED BY A FLUID INTAKE HIGH IN WATER AND JUICE

The stimulant urge of nicotine is similar to caffeine but faster acting. Nicotine is directly taken up in the blood from the lungs and works like adrenalin. The heart rate and blood pressure increase so that less oxygen is supplied to the heart. It is rare to find a heavy smoker without hypertension and a smoker's heart is taxed with an extra 10 million heart beats a year.

A stress state with subsequent hormone release is induced each time you smoke. Lipids (fats) are released to be used for energy during anticipated stress, but instead they are deposited in arteries since they are not really needed. Therefore, there is an increase in atherosclerosis among smokers.

Carbon monoxide from the inhaled smoke competes with oxygen in the bloodstream to bind with hemoglobin. The hemoglobin, which normally carries oxygen in the blood to the cells of the body, actually has a higher affinity for carbon monoxide when it becomes present in the bloodstream. The affinity results in oxygen-starved cells. Carbon monoxide takes hours to remove (its half-life is 4 hours), thus you become tired with endurance training and lose stamina while exercising if you are a smoker.

Carbon monoxide also increases the permeability of coronary artery membrames adding to the increased risk of plague build-up already induced by nicotine.

Degenerative changes take place in a smoker's lungs over time. Tiny hairs (cilia) line the lungs and keep the flow of mucous moving upward. This is the first line of defense for ridding impurities before they deposit deeper into the lungs. One cigarette will paralyze these cilia for 24 hours. In long term smokers, the cilia are wiped out. It is possible after several years of nonsmoking that there is a regeneration of the cilia to perform their intended function again.

The smoker's chronic cough is due to a lack of cilia to get rid of mucous. Bronchial spasms must be induced to try to expectorate mucous. Foreign matter irritates the bronchial tubes, and germs have an opportunity to reproduce and invade the body tissue. Smoking, being a lung irritant, causes a mass production of mucous. This mucous can plug membranes and inhibit the crosstransfer of oxygen into the blood.

Emphysema is the loss of elasticity of lung tissue. This results in difficulty to exhale air after it was breathed in. Thus, the lungs are not as well-ventilated as normal. With emphysema the exchange of oxygen and carbon dioxide becomes a

problem. The heart must work harder and heart problems develop. Heart failure is generally the end result.

Smoking speeds up the aging process by accelerating osteoporosis or the loss of bone density. Osteporosis results in higher risk of bone fractures couples with a longer healing time. Smoking also results in the loss of mineral from bone tissue.

Dermatologists now site nicotine as an agent responsible for accelerated aging of the skin. Long-term smokers experience increased skin wrinkling and decreased skin elasticity at a younger age.

Earlier menopause is generally seen in female smokers and could be another manifestation of the early aging process seen in the smoker.

## SMOKER'S TIP SHEET

### Before Trying to Cut Down or Quit Smoking

- Identify the strong personal reasons you have for wanting to cut down or quit smoking. These should be in addition to any general health reasons or perceived obligations to others you may have. Do serious thinking about the sincerity of purpose and readiness to follow through.

- Start a diary and determine when you are having the urge to smoke and what these urges are associated with. For example, note if alcohol, coffee, or cola drinks are associated with your smoking. Identify specific trigger cues. Pinpoint places and situations in which you do not smoke.

- Find a friend who is willing to cut down or quit along with you and a friend who has already quit. Talk over your feelings and enlist each other's moral support.

- Spend as much free time as possible in places where smoking is prohibited such as libraries, theaters, and department stores.

- When you feel a need to keep your hands busy, start reaching for a book, a paperclip, handiwork, go ride a bike, etc. instead of reaching for a cigarette.

## Cutting Down

- Absorb yourself in activities which are the most important and satisfying to you.

- Pay attention to your appearance. Look and feel sharp.

  Think of cutting down one day at a time. Tell yourself you are cutting down on cigarettes today. Then do it. Let tomorrow take care of itself.

- Stay aware of the fact that you are smoking. Think of the process of pulling smoke into the mouth and blowing out the lungs. Only allow yourself to smoke in one place. When you do smoke, don't do anything else but smoke (don't drink, eat, socialize, read or watch TV at the same time).

- Become aware of each cigarette. Hold it in the opposite hand, put cigarettes in different pockets to break the automatic reach.

- Each day, postpone lighting your first cigarette by 30 minutes.

- Buy cigarettes by the pack rather than by the carton. Wait until one pack is complete before purchasing another.

- Smoke only half of each cigarette.

- Switch to a brand you find distasteful or try not to smoke two packs of the same brand in a row.

- Don't empty your ashtrays. A full ashtray will remind you of how many cigarettes you smoke each day.

- Reidentify those specific trigger cues, then act on them. For example, if you never smoke in a car but always at lunch, eat lunch in the car. Relax in a different chair.

- Interrupt your routines. If you are used to smoking after a meal, get up from the table immediately and brush your teeth or go for a walk. Unwrap a stick of gum instead of lighting up when you climb into a car. Go to bed earlier to avoid the tension of hurrying.

- Limit your socializing to healthful, outdoor activities or situations where smoking is

prohibited until you are confident of your ability to cut down or quit.

- Add some spontaneity and excitement to your daily routine since bordom is often a trigger to smoke. Plan new things you have not done before or haven't had time to do in a while.

When the Urge Strikes

- Wait a few minutes. Research shows that real periods of craving typically last only 3 1/2 minutes. While you are waiting, change your activity and/or environment. Wait for an urge you just cannot postpone. Otherwise, put cigarettes back when you catch yourself starting to smoke automatically.

- Ask yourself if you really need that cigarette or if you are just reaching for it out of habit. "Is this ritual really doing what I think it's doing for me?"

- Beware of rationale, "Just this time it's all right it's all right to have a cigarette." Tell yourself instead, "I choose not to smoke." Then get a drink of water and breathe deeply.

- Keep low-calorie oral substitutes handy--things like carrots, pickles, cloves, fresh ginger, apples, celery and sugarless gum. Drink more liquids.

- Take 10 deep breaths and hold the last one while lighting a match. Exhale slowly and blow out the match. Pretend it is a cigarette and crush it out in the ashtray.

- Vigorous physical activity can help you work off the irritation or anger at not having a cigarette.

## METHODS OF QUITTING

### COLD TURKEY

Some contend that quitting cold turkey is transient and that drastic steps to quit increase the perceived value and pleasure of each remaining cigarette. Supporters of this view feel it is more important to learn about smoking habits

and to practice relaxation techniques before attempting to quit. They do not advocate cutting the amount of smoking in half or to less than 12-15 cigarettes per day initially.

On the other hand, psychologists tend to want heavy smokers to quit cold turkey feeling it is more effective than the gradual approach.

Remember, it is your decision on which method to use. The first week is the hardest regardless of which method you use.

## SMOKING CESSATION CLINICS

You may find a clinic useful. Sharing your withdrawal experiences with others and working with them on common problems can give you the extra support and motivation you need.

## THE TARGET DATE FOR QUITTING OR CUTTING DOWN

Some find it best to plan and prepare for the day on which they choose to cut down or quit smoking. Others simply wake up one morning and say to themselves, "This is it. No more cigarettes." It is recommended to choose a nonstressful time period with regards to work and home.

## THE EASE OF QUITTING

The ease of quitting doesn't always correlate with the amount and length of time smoked. Often the least symptoms have been observed to occur among heavy smokers. There is no way to tell beforehand.

# AFTER YOU QUIT

## The First 12 Hours After You Quit

Your body will begin to heal itself within the first 12 hours after your last cigarette. The level of carbon monoxide in your system will decline rapidly and your heart and lungs will begin to repair the damage caused by cigarette smoke.

Heart rate and diastolic blood pressure have been observed to decrease as early as 6 hours after withdrawal.

## The First Critical 12 to 72 Hours After You Quit

Instead of feeling better you may feel worse. Don't be surprised if you experience "symptoms of recovery" such as shortness of breath, tightness in the chest, fatigue, insomnia, visual disturbances, sweating, headaches, gastrointestinal complaints, irritability and inability to concentrate.

Withdrawal symptoms peak 3 to 4 days after quitting and usually subside entirely within a week to 10 days. The first week is the hardest regardless of which method of cessation is used.
KEEP REVIEWING THE BENEFITS OF SMOKING CESSATION.

Medications such as actifed, sudafed and chlortrimetron may be recommended by your physician to help combat the increased nose, mouth, and chest secretions experienced after quitting. Robitussin or lifesavers are helpful for a cough. Some find it helpful to use a room humidifier at home. Coughing will usually disappear after the first two weeks of cessation.

Consider aids to relaxation which may benefit you to include: meditation or relaxation techniques, saunas, jacuzzi's, warm milk or herb tea at bedtime and warm baths or long showers.

## The First Few Weeks After You Quit

Your senses of taste and smell will return and you can begin enjoying foods more. Your smoker's cough will disappear and you will be able to climb stairs and hike without being winded.

Headaches, muscle aches and abdominal cramps will start to subside. If these persist try cool compresses to the head, relaxation techniques, flexibility exercises and Tylenol.

Smokers are generally worried about WEIGHT GAIN after cessation. The fact is, 3 pounds is the average weight gain temporarily by and ex-smoker if he follows a sensible diet and exercises regularly. Some excess weight may be due to fluid retention from nicotine withdrawal. Your metabolism does not slow down once you stop smoking! Since taste and smell become more acute after quitting, there is a tendency to use high-calorie foods as rewards.

Some psychologists advocate pampering yourself since the few pounds gained are easily lost once you are in control of the habit. You would have to gain about 100 pounds to have the same harmful effects of smoking over one pack per day.

Recommendations against excessive weight gain include: eating 5 to 6 small meals a day of nutritious low-calorie foods, increasing your dietary fiber intake, increasing your fluid intake, eating "healthy" snacks and starting a daily exercise program.

## The Second and Third Month After You Quit

The worst is definitely behind you, but you may experience intense urges for a cigarette which "continues to smell good." Don't panic, this will decrease in time.

Social support in terms of praise from family and friends can decrease even though you still may be struggling alone one day at a time. Be ready for this possibility and hang in there.

## The Fourth Month to Four Years After You Quit

The old adage "one can't hurt" cause many to fail now. Unfortunately, since one cigarette can lead to another, you may get hooked again. The rationale used here is often, "Well, I quit once, I can do it again." Remember the unpleasantness of quitting and ask if this is really worth that cigarette.

If you do succumb to temptation, don't get discouraged. Know that the nicotine you absorb that one time is not enough in itself to get you smoking again. Instead, consider it a learning experience indicating that you will have to take more care in preparing for future temptations.

Failure also comes as a reaction to some kind of crisis at work or at home when would-be quitters tell themselves that because of the misfortune they deserve the comfort of a cigarette. Prepare in advance for such a possibility. Begin an exercise program and/or learn relaxation techniques. With resources such as these at hand, you won't have any excuse to resort to smoking should you meet an emergency.

Note: Among smokers who have been abstinent for 5 to 9 years, one out of five reports at least an occastional craving for tobacco.

- There is a 50% decrease in the risk of cardiovascular disease one year of cessation.
- Over 5-10 years of cessation you have the same risk of cardiovascular disease as a nonsmoker.

## PHYSIOLOGICAL EFFECTS OF SMOKING

| Body System/Function | Effects |
|---|---|
| Cardiovascular System | Increased resting heart rate<br>Increased blood pressure<br>Increased atherosclerosis<br>Decreased HDL cholesterol |
| Nervous system | Increased stimulation central nervous system |
| Decreased skeletal muscle tone | |
| Vision | Decreased visual fields |
| Endocrine System | Increased body stress response |
| Gastrointestional System | Decreased sphincter tone<br>Increased gastric reflux<br>Decreased senses of taste and smell |
| Neoplasia (cancer-inducing) the bladder | Increased risk of cancer of lung, lip, esophagus, and stomach |
| Other Disease | Increased risk of atherosclerosis, hypertension, general tissue ischemia, peripheral vascular disease, thrombus formation, cerbrovascular disease, chronic bronchitis, pulmonary emphysema, flu, pneumonia, peptic ulcers, gastric reflux |

## 13. STRESS

(MAJOR RISK FACTOR) There is considerable evidence to support the association of mental stress and certain personality types or psychological factors with an increased incidence of coronary heart disease. Chronic stress may have more than a casual relationship with other factors such as elevated cholesterol, hypertension, smoking, and the tendency to gain weight.

RISK POINTS:

| | |
|---|---|
| Slight or no tenstion | 0 |
| Moderate tension | 1 |
| High tension | 2 |
| Extreme tension | 3 |
| High strung | 4 |

### STRESS MANAGEMENT

Most people associate stress with high level executives who have so many demands placed on them that they spend 18 hours a day at work, eat their meals on the run, and only sleep three to four hours a night. But stress is more basic than this. Everyone alive experiences stress. Each progressive stage of life brings its own accompanying "stressors," or causes of stress. Stress need not always be negative, though. Sometimes it can be useful and even enjoyable. Problems arise, however, when there is an inability to cope with stress, whether it be the everyday "wear and tear" of life, or major stressful events and situations.

Stress can result from any change that you are forced to adapt to. In any given day or week, you meet and lose friends, confront challenges at work or in social settings, and have responsibilities to your job, family, community, and yourself. Whether the stress is minor or serious, positive or negative, it always produces certain physiological changes in the body. If the stress is constant or severe, these changes may produce any of a host of health problems, including heart disease.

### YOUR PERSONALITY TYPE

Personality behavior patterns are closely related to stress, or more correctly, your response to the stressors around you. Two basic personality types have been described in this regard. The TYPE A personality is a hard-driving, fast-moving, always-rushed, little satisfied behavior pattern. The individual with this personality type has a greater than average risk for developing coronary heart disease and other stress-related illnesses. The TYPE B personality pattern is a calmer, more reserved behavior response. Individuals with

this pattern do not worry much, are not normally rushed, and take more time to enjoy life, rather than focus all of their attention on their work or productivity. TYPE B individuals have less than half the risk for heart attack than TYPE A individuals. Risks for other diseases are less, too.

Of course, not everyone falls into the extreme ranges of these personality types. Perhaps most fall somewhere between. But the more characteristics of the TYPE A personality you have, the more you need to apply some basic stress management principles. Studies have shown that TYPE A individuals who follow stress management guidelines and who modify certain thought and activity patterns, can actually change their personality types to more like those of TYPE B individuals. Their risk for heart and other diseases is then reduced, and many times their level of enjoyment of life is increased.

The "Personal Lifestyle Improvement Questionaire" was used to estimate your stress level. Use the self-assessment test below as an additional means to determine the presence of high coronary risk (TYPE A) factors in your lifestyle. Mark each statement with a "Yes," if it is usually true for you, or "No," if it is not.

CORONARY PRONE (TYPE A) BEHAVIOR PATTERNS

| | YES | NO |
|---|---|---|
| (1) I have an intense sustained drive to get ahead. | _____ | _____ |
| (2) I am anxious to reach my goals, but I am uncertain what these goals are. | _____ | _____ |
| (3) I feel a need to compete to win. | _____ | _____ |
| (4) I have a persistent desire for recognition. | _____ | _____ |
| (5) I always seem to be involved in too many things at once. | _____ | _____ |
| (6) I am always racing the clock, constantly on edge, have too many deadlines. | _____ | _____ |
| (7) I have a need to speed things up and get things done faster. | _____ | _____ |
| (8) I am extraordinarily alert mentally and physically. | _____ | _____ |
| Total of YES | _____ | |

(Adapted from: Friedman, M. Association of Specific Overt Behavior Patterns with Blood and Cardiovascular Findings, Journal of American Medical Association, 169: 59.)

A "yes" response represents a tendency toward TYPE A personality behavior. If you have several "yes" answers, be aware that you running a higher than average risk of

developing heart disease as a result of your lifestyle. Try to change your "yes" responses to "no" responses.

## HOW TO COPE WITH STRESS

Obviously, it is not only impossible but quite undesirable to eliminate stressors from every area of your life, especially those stressors that are positive and rewarding. Your objectives should be to learn how to eliminate or reduce as much negative stress as you can, cope with and enjoy the positive stress, and deal creatively with what you cannot change. To help you do that, the following stress management strategies may be useful:

1. Avoid unnecessary stress. If a situation causing stress is correctable, correct it. Separate known stressful events in your schedule; leave early enough to avoid being late; solve little problems before they turn into big ones.
2. Get adequate rest and relaxation. Sufficient sleep can help you feel refreshed and mentally alert in stressful situations. Schedule into your daily and weekly activities specific times for breaks or rest periods. Avoid stress and unnecessary work at least one full day out of the week, and take a vacation when you are due one. Learning to get away from your normal routine is much more than a temporary form of escapism, it gives your mind and body a chance to recuperate and grow, making it easier to tackle problems from new and fresh perspectives.

3. Live one day at a time. Don't create stress by worrying about the future, especially by worrying about the things you cannot change anyway. Concentrate on the job before you today. Plan for tomorrow, but don't worry about it.

4. Be willing to bend. Even steel has some flexibility. Inflexible people, like inflexible objects, tend to break when under pressure. You may be in the right and know it, but a little give-and-take will help remove tension and often lead to a workable solution. Showing flexibility from your side usually brings about flexibility from the other side.

5. Develop a positive mental attitude. One of the most important things you can develop to help you handle stress, is an "I can" attitude. Expecting positive outcomes frequently produces a chain of circumstances that lead to them. Think positively about every situation in life you face; determine to learn something from it and be better for having gone through it. Look for the good points in even the most difficult people. Believe in yourself and your ability. Develop a sense of

humor; learn to laugh, even at yourself, when appropriate.

6. Do not be overly critical of yourself. Realize you are not perfect or superhuman. Be happy with the skills and abilities you possess, and strive to improve them. Learn your limits and avoid pushing yourself to them too frequently. Accept the fact that you may occasionally fail, but you never have to be defeated. Learn from your mistakes and go on.

7. Talk it out. Don't bottle up your feelings. Find a friend or some other person you can trust, and talk things out. Confiding in someone helps you to relieve some of the stress merely by talking about it and getting it out in the open. You may also be able to understand your feelings better as you verbalize them,and frequently, the suggestions of others may be just the help you need to solve the problem. Get the informati. or the help you need from financiers, clergy, friends, or perhaps most important, your spouse. Few problems are worth facing alone.

8. Keep a journal or a diary. Writing down your thoughts about stressful events is one way to express your feelings if other ways seem inappropriate. Keeping a record of all the stressful events in your day (both large and small) may also give you an idea of just how much stress you are really under. A written record may provide you with new insight on how you react to specific situations, and what you can do to change your reactions, if necessary.

9. Practice good nutrition. Often tension and nervousness lead to poor eating habits. When stress is compounded by a hectic schedule, there is a tendency to eat "fast foods" and "junk foods." The practice of skipping meals to fit more activities into your schedule is rarely beneficial. More often than not, the low blood sugar levels that result from skipping meals serves only to lower your levels of energy and concentration and increase the amount of fatigue you feel.

10. Manage your time wisely. Establish priorities for the activities you have to do, and do the high priority items first. Delegate responsibility to others when appropriate, and learn to say "no" when things begin to stack up. If necessary, write out a weekly schedule of everything you must do and when. Fill in periods of "wasted time" with practical and useful activities. Schedule time for breaks, recreation, and daily exercise.

11. Learn and practice specific relaxation techniques. Regular periods of meditation or relaxation exercises have been shown to cause what is called a "relaxation response" in many individuals. It includes a lowering of the heart rate, blood pressure, and respiration, and a general feeling of well-being providing greater stamina in the face of stressful situations. The following relaxation technique is an example which can be used to bring about relaxation. Use it one to two times a day for 10-20 minutes per session.

Procedure: Find a quiet, well-ventilated room and turn the lights down or off. Some people can relax in a sitting position, but most find lying comfortably on their backs to be a more ideal position for totally releasing tension. Soft background music is optional. Progress through the following series of muscle concentrations for 5-10 seconds each, and then relax the muscles completely for 30 seconds to one minute. "Feel the tension flow out" as you relax. (Tighten the muscles . . . hold it . . . relax the muscles . . . feel it.) You may use the following progression: Raise eyebrows; squeeze eyes shut; clench teeth; know up entire face; chin to chest (feel the tension in your neck and jaw); hunch up shoulders; clench right fist with arm extended at shoulder height; now left fist and arm; both hands and arms; tigthen muscles in it; pull toes upward, toward you; now raise left leg and again, tighten calf and thigh muscles; both legs together, pointing toes straight forward as far as you can. Take a few moments to think how muscles feel throughout your body (go down the list again.) If any muscles are not quite relaxed, repeat the tightening and relaxing maneuver for them. Spend a few moments to experience the relaxation in your body.

12. Exercise regularly. Exercise can help you channel frustrations, give you time to think things through, give you a sense of accomplishment, and help relieve muscle tension. When you feel better physically you feel better mentally, giving yourself the edge you need to withstand stress. Proper use and correct amounts of exercise help you develop mental and physical tolerance to stress.

(a) Exercise delays the onset of fatigue, helping you resist stress. Aerobic exercise conditions and enhances performance of vital organs of the body such as the heart, lungs, respiratory system and blood vessels. When you are under stress, these systems automatically respond, increasing your heart rate, blood pressure, and respiration. If you are "out of shape" this extra workload on the body will cause you to fatigue quickly. The

physically fit individual begins with a lower heart rate, lower blood pressure and a training effect that resists the overload demands due to stress.

(b) Exercise reduces body fat. Through a regular exercise program, a proper ratio of body fat to lean tissue (muscle, bone, etc.) can be achieved. When body fat is reduced, there is less pressure on the cardiovascular and respiratory systems. Thus, physical tasks at work and at home become easier, and the digestion and absorption of essential nutrients are improved.

(c) Exercise increases mental alertness. An aerobic fitness program improves your levels of energy and alertness by increasing the amount of oxygen circulating in the blood to all the organs of the boyd, including your brain. Your body will actually make more blood to carry the oxygen, and be able to pump more blood to all body parts with less effort.

(d) Exercise helps regulate and moderate the use of blood sugar and fat. The physically fit person will conserve blood sugar for use by the brain and nervous system for use in times of stress. When under stress, the fit body will also mobilize and metabolize fat better, and keep a steady balance of insulin and blood sugar levels.

(e) Exercise helps reduce tension. Exercise involves constant contracting or "muscle tensing" followed by muscle relaxation or "stretching." After a vigorous workout, the muscles you used begin to relax, and you begin to feel it throughout your body. Even headaches may be relieved by the relaxation effect of exercise on the shoulder and neck muscles.

(f) Exercise helps reduce anxiety and depression. Recently, scientists have discovered that a strong "pain killer" type of chemical, called endorphines, are released during exercise and may linger hours afterward. This discovery, in part, may account for the tranquil, relaxed, feelings of well-being that so many regular exercisers enjoy. This and other effects of exercise can be useful in reducing or controlling depression, as well.

In summary, fitness can be a major weapon in your arsenal of defense against stress.

Source: AFP 35-XX, "U.S. Air Force Fitness Program--Test." Adapted with approval of USAF Special Office on Fitness, HQ AFMPC.

# THE ROLE OF EXERCISE

Exercise is known to have a positive effect on cholesterol, high density lipoproteins (HDLs), triglycerides, blood pressure, body fat, cardiovascular fitness and stress. The purpose here is to briefly summarize some of these beneficial effects and to outline basic medical considerations for the beginning exerciser. As examples of recommended exercise programs, jogging routines from AFP 35-XX, "U.S. Air Force Fitness Program," are included.

## BENEFITS

### Cardiorespiratory Benefits

After a period of training (six to eight weeks), there is a slow but consistent reduction in resting heart rate along with an increase in stroke volume. This means that more blood is pumped with each heart beat, so the heart does not have to beat as often to supply the body with blood. In addition, the slower heart rate and increased stroke volume allow the heart more rest between beats.

Strenuous training will cause dramatic improvements in exercise performance and the amount of oxygen the body can use (aerobic capacity). Training studies have shown that aerobic capacity increases with improved stroke volume and cardiac output during prolonged work. In addition, people with high aerobic capacities get more blood to the exercising muscles. Also, it is known that aerobic capacity is related to the ability to perform prolonged exercise.

Several studies have indicated that active people tend to have lower resting blood pressures than do sedentary people. For people who have serious medical complications related to high blood pressure, the benefits of exercise for lowering blood pressure may be limited, but are present. It is generally accepted that regular aerobic exercise will control if not reduce blood pressure.

The evidence of the effects of exercise on levels of two major fat substances in the blood is encouraging. These fats, cholesterol and triglycerides, are believed to be involved in heart disease. Research suggests that the less these substances are present in the blood, the better. People who are very active and who have proper nutritional eating habits tend to have less of these fats in their blood.

## Body Composition Benefits

Exercise programs directed at building strength and flexibility will help develop strong muscles. An increase in muscular strength means muscles will get larger. For women, however, increase in muscle size is not as evident due to hormonal factors.

People who have good to high levels of physical fitness are seldom overweight or, more importantly, they tend not to be fat. Many studies have shown that body fat is reduced as a result of vigorous, regular exercise. Exercise is important in weight control.

At present, it seems that in the early stages of a training program there is little weight loss. Instead, the body composition is redistributed and firmed up. Muscles get stronger, mass increases and fat disappears. Body weight may remain the same even though there is a fat loss. Usually the person notices decreases in various body measurements. In most cases, weight loss during the first weeks of training is mainly water.

As the training program progresses, one continues to burn calories and the loss of weight continues even though the individual maintains the same eating habits. The perfect combination for weight loss is exercise and diet.

As people become more physically active, they suddenly become more aware of what they are eating. They naturally want to eat foods which are less likely to add extra calories and fat.

## Psychological Benefits

Subjective benefits are numerous.

Among the positive results of vigorous activity are the psychological benefits. Although the evidence is not clear-cut, a sense of calm is one result of participating in exercise, according to many active people. Sports and exercise as a change from the every day duties of work provide excellent stress relief and relaxation for the mind and body.

Dr. Ronald Lawrence, founder and president of the American Medical Joggers Association, is convinced that vigorous exercise, in this case jogging and running, improves an individual's total well-being. He feels people sleep better but require less sleep. Many believe their sex life is enhanced. They are better prepared to cope with stress and improve their work productivity. Whether these benefits are classified as physical or mental, he strongly

feels that vigorous activity strengthens one's quality of life.

The benefits of exercise have been objectively and subjectively measured and recorded for many years. When participating in a regular group routine of physical activity for a period of four to eight weeks, it is possible to begin seeing the training effect occur. This effect is an adaptation that occurs progressively. It is the body's response to regular participation in physical activity.

## OVERALL BENEFITS

Following is a list of effects exercise may have if adhered to for a sustained period of time. The benefits of a training or conditioning program should occur if the following procedures are followed:

1. Exercise at least three times a week.
2. Achieve the training heart rate zone (See page 41)
3. Maintain the target rate for at least 20 minutes each exercise bout.

The American Heart Association, in advocating physical activity as an adjunct to the elimination of smoking and the control of high blood pressure, levels of fat in the blood and obesity, cites the following benefits of regular physical activity:

1. It enhances the quality of life by increasing the capability for work and play.
2. It may be a preventive measure to reduce the chance of coronary heart disease.
3. Exercise is the most inexpensive and enjoyable form of preventive medicine.

Other benefits of regular physical activity include:

1. Decreases proneness to disorders related to sporatic physical activities, such as high blood pressure, lower back pain and elimination problems.
2. Increases the ability to adjust to and withstand physiological and psychological stress.
3. Serves therapeutically as an emotional carthar-sis or tension release mechanism.
4. Promotes sleep and relaxation.
5. Decreases the incidence of injury such as sprains and muscle pulls.
6. Increases psychosocial aspects such as self-confidence, personal effectiveness, body image, self satisfaction, achievement and a sense of well-being.

Source: United States Sports Academy, Total Health and Fitness Plan, Chap 5. United States Sports Academy, Mobile, AL, 1983.

## MEDICAL CONSIDERATIONS

Before engaging in a vigorous conditioning program, certain medical or health issues need to be addressed. If you are not currently established in an aerobic exercise program (vigorous exercise for 20 minutes, three times per week which raises your heart rate to at least 120 beats per minute), we recommend you consider the following questions:

1. Does any RISK CATEGORY indicate "High" or "Very High" vulnerability?
2. Do you ever notice chest pain or tightness radiating into your arm, shoulder, or jaw when exercising or under stress?
3. Has a medical practitioner told you not to exercise?
4. Do you become extremely short of breath with mild exercise or exertion?
5. Do you have frequent dizzy spells?
6. Do you feel frequent skipped heart beats?
7. Do you feel frequent racing of the heart beat?
8. Do you ever experience blurred vision while exercising?

Any YES response suggests a need for medical consultation before beginning an exercise program.

As a minimum, everyone beginning strenuous exercise should understand what is safe. The concept "Training Heart Rate" covered next is an excellent starting point.

Your training heart rate has been computed for you on the "Personalized Cardiovascular Exercise Prescription" included with this package.

## THE ROLE OF EXERCISE

### TRAINING HEART RATE

The most effective exercise programs are those that require oxygen for prolonged periods and place demands on the body that requires it to improve its ability to handle oxygen. Jogging is a typical example. How much exercise is required to achieve fitness, but not be overstrenuous? The answer is best understood in terms of a percentage of maximum heart rate (MHR). It has been determined that a "training heart rate" of 60 to 90 percent of your maximum heart rate is most effective. The lower end of the zone should be used by individuals who are unconditioned, while the upper end can be used by persons who are well conditioned. (If you have not exercised regularly, a reasonable training heart rate is 70 to 75 percent of your MHR.)

Your maximum heart rate will vary with age. Use the following formulas to estimate:

Male: MHR = 205 minus 1/2 age

Female: MHR = 220 minus age

Training Heart Rate = MHR X desired percent

(Example: A 40 year old unconditioned female's training heart rate is (220-40) X .70 = 126)

In the early stages of any exercise program you should stop about every five minutes and quickly count your pulse rate (count for 6 seconds and multiply by 10). Adjust your exercise as needed. The "talk test" will give you an idea of whether or not you are in your training zone. If you can talk during the exercise, you are probably safe.

The training heart rate should be maintained for a minimum of 20 minutes. As fitness improves, the exerciser will find harder work is necessary to get the rate up to 70 percent of maximal. This is an indication of becoming conditioned.

## THE GENERAL EXERCISE PATTERN

Regardless of the type of exercise activity selected, the specific exercise pattern of the daily routine should include several basic components. The basic pattern moves through four phases with an emphasis on the aerobic phase: The four phases are:

1. Warm-Up: This involves stretching and rhythmic movement to warm-up the muscles and gradually elevate the heart rate.

2. Aerobics: This is the most important part of the routine in that it is the period when aerobic capacity and endurance are improved.

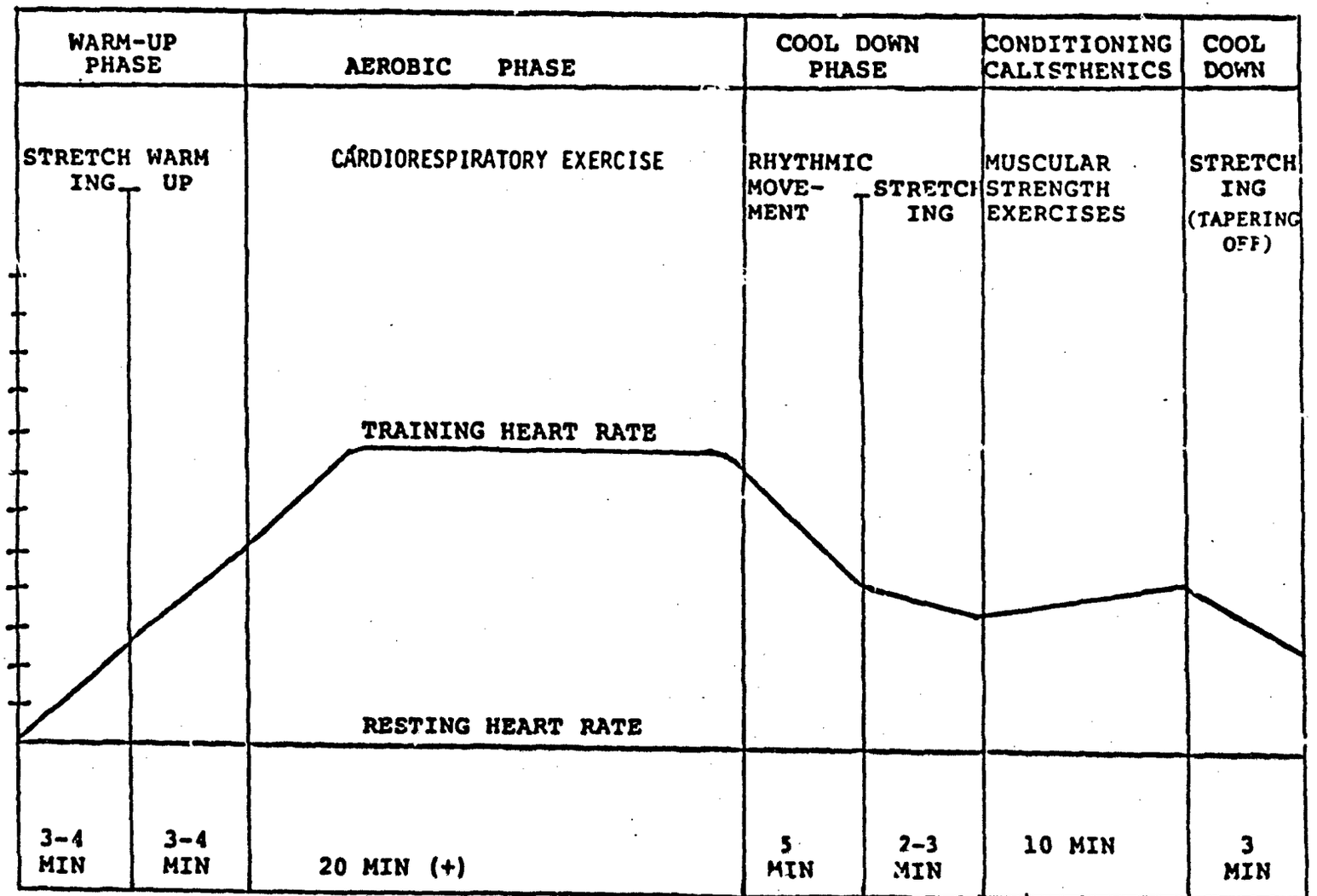
3. Cool-Down: This involves a slow rhythmic tapering down and stretching to get the pulse rate gradually down and to remove muscle tissue waste products.

4. Conditioning Calisthenics and Cool Down: Calisthenic exercises and/or weight training for overall muscle conditioning is an important part of a total body workout. Allow at least 10 minutes 3 times per week for such activity. Start and end by gradual stretching to help prevent soreness and injury.

For some, it may be desirous to do the total routine of four phases each time you exercise. For others, the routine may involve aerobic days (using the first three phases) alternated with strength-training days (using the last phase). A sample training session might look like the figure on the following page.

Source: AFP 35-XX, "Test of the Enhanced Fitness Program"

## IDEAL TOTAL EXERCISE SESSION




Source: AFP 35-XX, "Test of the Enhanced Fitness Program"

## PERFORMANCE STANDARDS FOR 1.5 MILE RUN*

| AGE(years) 13-19 / FITNESS CATEGORY | | 20-29 | 30-39 | 40-49 | 50-59 | 60 + |
|---|---|---|---|---|---|---|
| | | | Time(Minutes) | | | |
| I. VERY POOR | (men) | >15:31 | >16:01 | >16:31 | >17:31 | >19:01 | > 20:0 |
| | (women) | >18:31 | >19:01 | >19:31 | >20:01 | >20:31 | > 21:0 |
| II. Poor | (men) | 12:11-15:30 | 14:01-16:00 | 14:45-16:30 | 15:36-17:30 | 17:01-19:00 | 19:01-20:0 |
| | *(women) | 16:55-18:30 | 18:31-19:00 | 19:01-19:30 | 19:31-20:00 | 20:01-20:30 | 20:31-21:0 |
| III. Fair | (men) | 10:49-12:10 | 12:01-14:00 | 12:31-14:44 | 13:01-15:35 | 14:31-17:00 | 16:16-19:0 |
| | *(women) | 14:31-16:54 | 15:55-18:30 | 16:31-19:00 | 17:31-19:30 | 19:01-20:00 | 19:31-20:3 |
| IV. Good | (men) | 9:41-10:48 | 10:46-12:00 | 11:01-12:30 | 11:31-13:00 | 12:31-14:30 | 14:00-16:1 |
| | (women) | 12:30-14:30 | 13:31-15:54 | 14:31-16:30 | 15:56-17:30 | 16:31-19:00 | 17:31-19:3 |
| V. Excellent | (men) | 8:37-9:40 | 9:45-10:45 | 10:00-11:00 | 10:30-11:30 | 11:00-12:30 | 11:15-13:5 |
| | (women) | 11:50-12:29 | 12:30-13:30 | 13:00-14:30 | 13:45-15:55 | 14:30-16:30 | 16:30-17:3 |
| VI. Superior | (men) | <8:37 | < 9:45 | <10:00 | <10:30 | < 11:00 | < 11:1 |
| | (women) | <11:50 | < 12:30 | <13:00 | <13:45 | < 14:30 | < 16:3 |

< means "less than; > means "more than"

### ALTITUDE ADJUSTMENTS

| Altitude at which acclimatized | Time to be added to each fitness category for running 1.5 miles |
|---|---|
| 5,000' | 30 seconds |
| 6,000' | 40 seconds |
| 7,000' | 50 seconds |
| 8,000' | 1 minute |
| 9,000' | 1 minute 15 seconds |
| 10,000' | 1 minute 30 seconds |
| 11,000' | 1 minute 45 seconds |
| 12,000' | 2 minutes |

* Adapted from The Aerobics Program for Total Well-Being by Kenneth H. Cooper M.D.: M. Evans Co., 1982

* Women's performance standards listed here are not the same as those used for the Air Force fitness evaluation standards in AFR 35-XX.

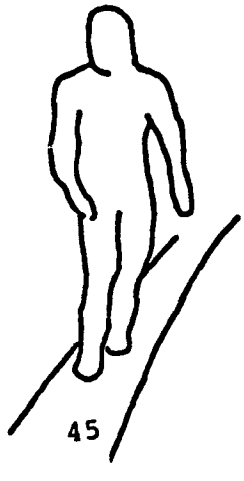


Scurce: AFP 35-XX, "Test of the Enhanced Fitness Program"

## FITNESS CATEGORIES I, II, III STARTER PROGRAM

### WALKING

| Week | Distance (miles) | (km) | Time Goal (min) | Freq/Wk | Points/Wk |
|---|---|---|---|---|---|
| 1 | 2.0 | 3.2 | 36:00 | 3 | 11 |
| 2 | 2.0 | 3.2 | 34:00 | 3 | 12 |
| 3 | 2.0 | 3.2 | 32:00 | 4 | 18 |
| 4 | 2.0 | 3.2 | 30:00 | 4 | 20 |
| 5 | 2.5 | 4.0 | 39:00 | 4 | 24 |
| 6 | 2.5 | 4.0 | 38:00 | 5 | 32 |
| 7 | 2.5 | 4.0 | 37:00 | 5 | 33 |
| 8 | 3.0 | 4.8 | 46:00 | 5 | 39 |
| 9 | 3.0 | 4.8 | 45:00 | 5 | 40 |
| 10 | 3.0 | 4.8 | 44:00 | 4 | 33 |





Source: AFP 35-XX, "Test of the Enhanced Fitness Program"

## FITNESS CATEGORIES I, II, III STARTER PROGRAM

### RUNNING/JOGGING

| Week | Activity | Distance (miles) | (km) | Time Goal (min) | Freq/Wk | Points/Wk |
|---|---|---|---|---|---|---|
| 1 | walk | 2.0 | 3.2 | 34:00 | 3 | 12 |
| 2 | walk | 2.5 | 4.0 | 42:00 | 3 | 16 |
| 3 | walk | 3.0 | 4.8 | 50:00 | 3 | 20 |
| 4 | walk/jog | 2.0 | 3.2 | 25:00 | 4 | 26 |
| 5 | walk/jog | 2.0 | 3.2 | 24:00 | 4 | 28 |
| 6 | jog | 2.0 | 3.2 | 22:00 | 4 | 32 |
| 7 | jog | 2.5 | 4.0 | 20:00 | 4 | 36 |

MAINTENANCE PROGRAMS FOR THE PERSON ALREADY CONDITIONED

for all

WALKING

| Distance (miles) | (km) | Time requirement (min) | Freq/Wk | Point |
|---|---|---|---|---|
| 2.0 | or 3.2 | 24:01-30:00 | 6 | 30 |
| 3.0 | or 4.8 | 36:01-45:00 | 4 | 32 |
| 4.0 | or 6.4 | 48:01-60:00 | 3 | 33 |
| 4.0 | or 6.4 | 60:01-80:00 | 5 | 35 |
| 5.0 | or 8.0 | 75:01-100:00 | 4 | 36 |
| 5.0 | or 8.0 | 60:01-75:00 | 3 | 42 |

Source: AFP 35-XX, "Test of the Enhanced Fitness Program"

## MAINTENANCE PROGRAMS FOR THE PERSON ALREADY CONDITIONED for all age

### RUNNING

| Distance (miles) | | (km) | Time Requirement | Freq/Wk | Points/Wk |
|---|---|---|---|---|---|
| 1.0 | or | 1.6 | 6:41-8:00 | 6 | 30 |
| 1.5 | or | 2.4 | 10:01-12:00 | 4 | 32 |
| 1.5 | or | 2.4 | 12:01-15:00 | 5 | 32 |
| 2.0 | or | 3.2 | 16:01-20:00 | 4 | 36 |
| 2.0 | or | 3.2 | 13:21-16:00 | 3 | 33 |
| 3.0 | or | 4.8 | 30:01-36:00 | 3 | 33 |
| 3.0 | or | 4.8 | 36:01-45:00 | 4 | 32 |

Source: AFP 35-XX, "Test of the Enhanced Fitness Program"

## ADVANCED WALKING EXERCISE PROGRAM

| Week | Distance (miles) | Distance (km) | Time Goal (minutes) | Freq/Wk | Points/Wk |
|---|---|---|---|---|---|
| 1 | 3.0 | 4.8 | 45:00 | 5 | 40 |
| 2 | 3.0 | 4.8 | 44:00 | 5 | 41 |
| 3 | 3.0 | 4.8 | 43:00 | 5 | 43 |
| 4 | 3.0 | 4.8 | 42:00 | 5 | 44 |
| 5 | 3.5 | 5.6 | 45:00 | 5 | 47 |
| 6 | 3.5 | 5.6 | 42:00 | 5 | 65 |

## ADVANCED JOGGING/RUNNING EXERCISE PROGRAM

| | | | | | |
|---|---|---|---|---|---|
| 1 | 2.5 | 4.0 | 27:00 | 4 | 42 |
| 2 | 2.5 | 4.0 | 26:00 | 4 | 44 |
| 3 | 2.5 | 4.0 | 25:00 | 4 | 46 |
| 4 | 2.5 | 4.0 | 23:00 | 4 | 49 |
| 5 | 3.0 | 4.8 | 39:00 | 4 | 56 |
| 6 | 3.0 | 4.8 | 29:00 | 4 | 58 |
| 7 | 3.0 | 4.9 | 27:00 | 4 | 61 |
| 8 | 3.5 | 5.6 | 35:00 | 4 | 66 |
| 9 | 3.0 | 4.9 | 27:00 | 5 | 70 |
| 10 | 3.5 | 5.6 | 31:30 | 5 | 82 |
| 11 | 4.0 | 6.4 | 36:00 | 5 | 95 |
| 12 | 5.0 | 8.0 | 44:00 | 5 | 120 |

Source: AFP 35-XX, "Test of the Enhanced Fitness Program"

## HOW DO YOU COMPARE?

### SENIOR SERVICE SCHOOL MALES

| | Air War College Class of '84 (N=229) | | National Defense Univ. Class of '84 (N=199 ) | |
|---|---|---|---|---|
| RISK FACTOR | MEAN | RANGE | MEAN | RANGE |
| Total Cholesterol (mg/dl) | 212.1 | 125-363 | 201.6 | 111-364 |
| HDL | 42.5 | 15-144 | 52.8 | 20-132 |
| Cholesterol Ratio | 5.3 | 1.5-18.8 | 4.0 | 1.7-10.5 |
| Triglycerides (mg/dl) | 119.2 | 14-294 | 111.7 | 20-143 |
| Glucose (mg/dl) | 99.8 | 31-295 | 88.8 | 47-143 |
| Systolic BP (mm Hg) | 125.2 | 100-192 | 128.5 | 94-182 |
| Diastolic BP (mm Hg) | 81.2 | 61-112 | 80.9 | 56-110 |
| Body Fat (%) | (Not calculated) | | 18.6 | 2.8-36.4 |
| Age (Yrs) | 41.8 | 36-65 | 41.9 | 31-56 |
| Non-Smoker (%) | 81.9% | | 79.5% | |

## PART II

## WHOLE HEALTH SERUM ANALYSIS

The following definitions/explanations are to be used with your blood analysis laboratory report, AU Form 910.

### INTRODUCTION

This more extensive blood chemistry is to complement your "Cardiovascular Risk Factor Report" by emphasizing the concept of "whole health." The blood analysis values constitute a good assessment of the body's metabolism. Inasmuch as various components of metabolism take place in different organs, each single value tends to reflect the metabolic activity of some specific organ and this in turn indicates health or disorder in that part of the body.

### EXPLANATIONS

GLUC (Glucose) See page 13 in this book.

CREAT (Creatinine) is a product of protein metabolism. Expected Range is 0.7 to 1.6. Elevated creatinine levels generally indicate kidney disease that has seriously damaged 50 percent or more of the kidney's ability to filter the blood effectively. Test results below normal have no significance. Levels above 2.0 indicate need for further evaluation.

BUN (Blood Urea Nitrogen) is another end product of protein metabolism. Expected Range is 5.7 to 26.8. Elevated BUN levels occur in kidney disease, decreased kidney blood flow (dehydration), urinary tract obstruction (prostate enlargement) and increased protein metabolism (severe burns). Low levels can occur in malnutrition and over hydration (drinking too much liquid). Levels above 40 require further evaluation.

UA (Uric Acid) is a product of purine (amino acid protein) metabolism. Expected Range is 3.0 to 9.8. Increased uric acid may indicate gout or possibly kidney disease and certain anemias (decreased red blood cells). Illness associated with low levels is very rare. Levels above 13 indicate a need for repeat testing. Some studies indicate stress may elevate UA levels.

TP (Total Protein), composed of albumin and globulin (the major blood proteins), is a "carrier" substance. It carries drugs, hormones, vitamins and other substances. Expected

Range is 6.2 to 8.1. TP levels aid in the diagnosis of liver disease, protein deficiency, blood disorders, kidney disease, gastrointestinal disease and tumors. Transient minor deviations from the Expected Range are frequent and should be interpreted in relation to other values. For more information on Protein, see Executive Health, pages 185 to 187.

ALB (Not tested)

CHOL (Cholesterol) See page 4 in this book.

TRIG (Triglycerides) See page 12 in this book.

Na+ (Sodium) is one half the component of table salt (NaCl). Expected Range is 135 to 148. Na affects body water distribution, helps promote nerve-muscle function, helps maintain acid-base balance and influences chloride and potassium levels. Sodium imbalance can result from a loss or gain of sodium or a change in water volume. Elevated sodium levels may be due to inadequate water intake, excessive water loss (prolonged vomiting), or excessive sodium intake. Low levels may result from inadequate intake, or excessive sodium loss (profuse sweating), diarrhea, and burns. Sodium levels should be compared with chloride, potassium and bicarbonate levels for proper interpretation.

K+ (Potassium) is a mineral that helps maintain muscle activity. Expected Range is 3.5 to 5.3. It is essential in maintaining electrical conduction within the heart. It also helps in acid base balance and kidney function. Elevated levels are present in patients with burns and crush injuries and in kidney disease. Low levels may be present in excessive loss of body fluids. High blood pressure medications may cause low levels of potassium. Levels above 6.0 and below 2.9 should be evaluated.

Cl- (Chloride) is the other component of table salt (Na Cl). Expected Range is 96 to 109. It helps regulate blood volume and pressure and also helps regulate acid-base balance. Elevated levels may result from dehydration and kidney disease. Low levels are usually associated with low potassium and sodium levels.

$CO_2$ (Bicarbonate) reflects the adequacy of air exchange in the lungs and the efficiency of the acid-base buffer system. Expected range is 22 to 34. Elevated levels may be due to excessive ingestion of bicarbonate, hypoventilation, and from excessive loss of acids (severe vomiting). Decreased levels are present with hyperventilation. Evaluation of bicarbonate levels are related to Na, K, and Cl.

Ca++ (Calcium) is a mineral that helps regulate body metabolism, bone development and blood clotting. Expected Range is 8.1 to 10.7. Elevated levels may occur in parathyroid tumors, bone disease, fractures, and excessive ingestion (antiacids). Low levels may indicate parathyroid failure, malabsorption and kidney failure. Calcium metabolism varies inversly with phosphate metabolism. Test results frequently vary above and below the expected range.

PHOS (Phosphates) help store and utilize body energy and help regulate calcium levels. Expected Range is 2.6 to 4.8. Phosphate values alone are of limited value.

D.BILI (Direct Bilirubin). Bilirubin is a substance used to evaluate liver function. Direct Bilirubin is that substance which has been processed through the liver and may indicate gall bladder system disorders. Expected Range is 0.0 to 0.4. Slight elevations may be a permanent inherited characteristic or may appear after fasting.

T.BILI (Total Bilirubin) is a measure of the total level of bilirubin. Expected Range is 0.1 to 1.5. By subtracting the direct bilirubin from the total bilirubin, the level of indirect bilirubin is obtained. Elevated indirect bilirubin levels may indicate liver damage. High levels may also be seen in some severe anemia. Slight elevations beyond 1.5. may appear after fasting.

FE++ (Iron) is essential for the formation of hemoglobin. Expected Range is 42 to 226. Iron levels may be low if there is inadequate iron intake, chronic blood loss, or in chronic disease (rheumatoid arthritis). Iron levels may be elevated if excessive iron is ingested.

UBIC, CK, AST, and LD Not tested.

ALT (Alanine Aminotransferase) is an enzyme that appears primarily in liver cells and to lesser amounts in heart, kidneys, and skeletal muscles. When damage occurs to these cells, ALT is released into the blood stream in proportion to the extent of damage. Expected Range is 8 to 34. Very high levels (up to 1700) suggest viral hepatitis or other severe liver disease. Moderate levels (up to 1000) may indicate infectious mono or improving hepatitis. Slight elevations (up to 500) may indicate cirrhosis or drug induced hepatitis. Elevations of ALT need to be interpreted in relation to other enzyme tests.

ALK PHOS (Alkaline Phosphatase) is an enzyme that influences bone calcification (necessary to bone strength) and lipid (fat) movement within the body. It is found in liver, bones,

kidneys and intestinal lining. Expected Range is 29 to 74. Elevated levels generally indicate disease or damage to bones and liver (gall bladder obstruction, hepatitis, bone infection). Low levels are rarely associated with disease.

GGT (Gamma Glutamyl Transpeptidase) is an enzyme used in protein metabolism. Expected Range is 14 to 68. It is present in kidney, liver, and brain tissue. It is particularly sensitive to the effects of alcohol on the liver. Elevated levels may indicate disease of the liver, pancreas, kidneys, and brain. Low levels are of no clinical significance.

HDL (high density lipoprotein) See page 10 in this book.

## PHYSIOLOGICAL ASSESSMENT

### FREQUENTLY ASKED QUESTIONS

Frequently asked questions concerning one's blood chemistry:

1. If all my parameter values are with normal limits, exactly how healthy does that make me?

ANSWER: Good news. To a certain extent, it rules out serious disorder in any internal organ. A notable exception to this rule are so called degenerative disorders among which coronary artery disease is by far the most important. Even advanced arteriosclerosis usually does not show up in the blood test. (A treadmill test will detect that disorder.)

2. My health survey seems to be pretty normal except for this one value which is one point too high and one other value which is two points below normal. How bad is this?

ANSWER: The range of normal values actually represents only the highly probably normal range while the values sufficiently far out represent the highly probable abnormal range. Only values far outside the normal range, need be a concern.

The answer therefore, is that a value slightly outside the normal range is considered to be normal for all practical purposes. Another important consideration in this connection is the pattern of abnormal findings. Concurrent abnormality in two or more closely related factors is much more likely to reflect the true state of metabolism than concurrent abnormality in comparatively unrelated factors. Some understanding of the underlying processes of metabolism as well as a certain amount of medical judgment is required in order to completely interpret laboratory findings.

Also, it is important to keep in mind that metabolism is subject to change with time of month or even time of day. Biochemical values may fluctuate by 5-15 percent from day to day and even within a single 24 hour period.

3. Since the blood analysis seems to be so important, what should I do about it in the future for myself and for members of my family?

ANSWER: For an asymptomatic person free of medical complaints, a routine annual or biannual blood chemistry analysis is highly desirable. Of course, these laboratory medicine studies cannot substitute for direct physician contact when medical complaints are present.

Finally, it is important to keep in mind that an increase in physical activity will tend to affect the values of a few parameters. Occasionally, even shifting them out of the normal range. The changes in metabolism brought

about by increased musculoskeletal and cardiopulmonary work load levels most commonly result in elevation of Uric acid, L.D. (not tested), and most important, HDL.

(Adapted from National Defense University research)

APPENDIX (Q)

AIR WAR COLLEGE

EXECUTIVE HEALTH ANALYSIS PROGRAM

1. Overall value of Executive Health Awareness program?

| | No Value | Some Value | Undecided | High Value | Significantly High Value | |
|---|---|---|---|---|---|---|
| Students & Spouses | 0 | 9.3 | 2.2 | 40.7 | 47.8 | 88.5% |
| % Students Only | 0 | 8.5 | 2.1 | 42.3 | 47.2 | 89.5% |

2. Value of the blood chemistry analysis?

| | No Value | Some Value | Undecided | High Value | Significantly High Value | |
|---|---|---|---|---|---|---|
| % Students & Spouses | 0 | 5.8 | 1.3 | 33.5 | 59.4 | 92.9% |
| % Students Only | 0 | 4.9 | 1.4 | 31.0 | 62.7 | 93.7% |

3. Value of psychological health assessment?

| | No Value | Some Value | Undecided | High Value | Significantly High Value | |
|---|---|---|---|---|---|---|
| % Students & Spouses | 4.1 | 18.0 | 17.1 | 49.1 | 12.6 | 61.7% |
| % Students Only | 5.0 | 16.4 | 17.1 | 52.1 | 10.7 | 62.8% |

4. Value of a first period seminar for results analysis preceding explanation lectures.

| | No Value | Some Value | Undecided | High Value | Significantly High Value |
|---|---|---|---|---|---|
| % Students & Spouses | 8.2 | 26.0 | 15.5 | 34.7 | 15.5 |
| | | | | 50.2% | |
| % Students Only | 5.0 | 16.4 | 17.1 | 52.1 | 10.7 |
| | | | | 62.8% | |

5. Value of lectures by Dr. George Troxler and Dr. Nancy McDade that followed the seminar?

| | No Value | Some Value | Undecided | High Value | Significantly High Value |
|---|---|---|---|---|---|
| % Students & Spouses | .9 | 8.6 | 5.0 | 48.9 | 36.7 |
| | | | | 85.6% | |
| % Students Only | .0 | 7.0 | 5.6 | 53.5 | 33.8 |
| | | | | 87.3% | |

6. Value of the Adult Personality Inventory (API) (narrative format)?

| | No Value | Some Value | Undecided | High Value | Significantly High Value |
|---|---|---|---|---|---|
| % Students & Spouses | 2.7 | 21.5 | 13.9 | 45.7 | 16.1 |
| | | | | 61.8% | |
| % Students Only | 4.3 | 19.1 | 14.2 | 48.9 | 13.5 |
| | | | | 62.4% | |

7. Value of the locally scored 16 Personality Factors and Motivational Analysis Test printouts and the interpretive guide?

| | No Value | Some Value | Undecided | High Value | Significantly High Value |
|---|---|---|---|---|---|
| % Students & Spouses | 3.6 | 25.6 | 10.3 | 46.6 | 13.9 |
| | | | | 60.5% | |
| % Students Only | 4.3 | 24.1 | 12.8 | 48.9 | 9.9 |
| | | | | 58.8% | |

8. Value of any new information with regard to your stress vulnerability and management?

| | No Value | Some Value | Undecided | High Value | Significantly High Value |
|---|---|---|---|---|---|
| % Students & Spouses | 2.2 | 16.5 | 10.3 | 49.6 | 21.4 |
| | | | | 71% | |
| % Students Only | 3.5 | 11.3 | 11.3 | 54.6 | 19.1 |
| | | | | 73.7% | |

9. Value of any new information with regard to self-personality insights?

| | No Value | Some Value | Undecided | High Value | Significantly High Value |
|---|---|---|---|---|---|
| % Students & Spouses | 5.4 | 25.4 | 16.1 | 38.8 | 14.3 |
| | | | | 53.1% | |
| % Students Only | 7.1 | 22.0 | 17 | 43.3 | 10.6 |
| | | | | 53.9% | |

10. Value of any new information in motivating you toward lifestyle modifications?

| | No Value | Some Value | Undecided | High Value | Significantly High Value |
|---|---|---|---|---|---|
| % Students & Spouses | 3.6 | 14.7 | 13.3 | 41.3 | 27.1 |
| | | | | 68.4% | |
| % Students Only | 5.0 | 13.5 | 12.8 | 44.0 | 24.8 |
| | | | | 68.8% | |

11. As a result of this program I have: (Mark all appropriate responses)

| Students & Spouses | Students Only | |
|---|---|---|
| 70.8% | 72.5% | A - Changed my diet/nutrition habits |
| 53% | 49.3% | B - Changed my exercise routine |
| 18.3% | 18.1% | C - Confirmed that neither diet nor exercise program changes are required |
| 11.0% | 10.1% | D - Contacted a medical professional for further information/interpretation of my results |
| 5.9% | 6.5 | E - Contacted a medical professional for more extensiv medical assessment |

12. As a result of this program, I have:

| Students & Spouses | Students Only | |
|---|---|---|
| 1.8% | 1.4% | A - Stopped smoking |
| 16.3% | 15.9% | B - Become more convinced I should stop smoking |
| 81.4% | 81.9% | C - Not applicable (I am a non-smoker) |

13. Prior to this program, I was involved in an aerobic exercise program.

| Students & Spouses | Students Only | |
|---|---|---|
| 59.5% | 68.6% | A - Yes |
| 40.1% | 31.4% | B - No |